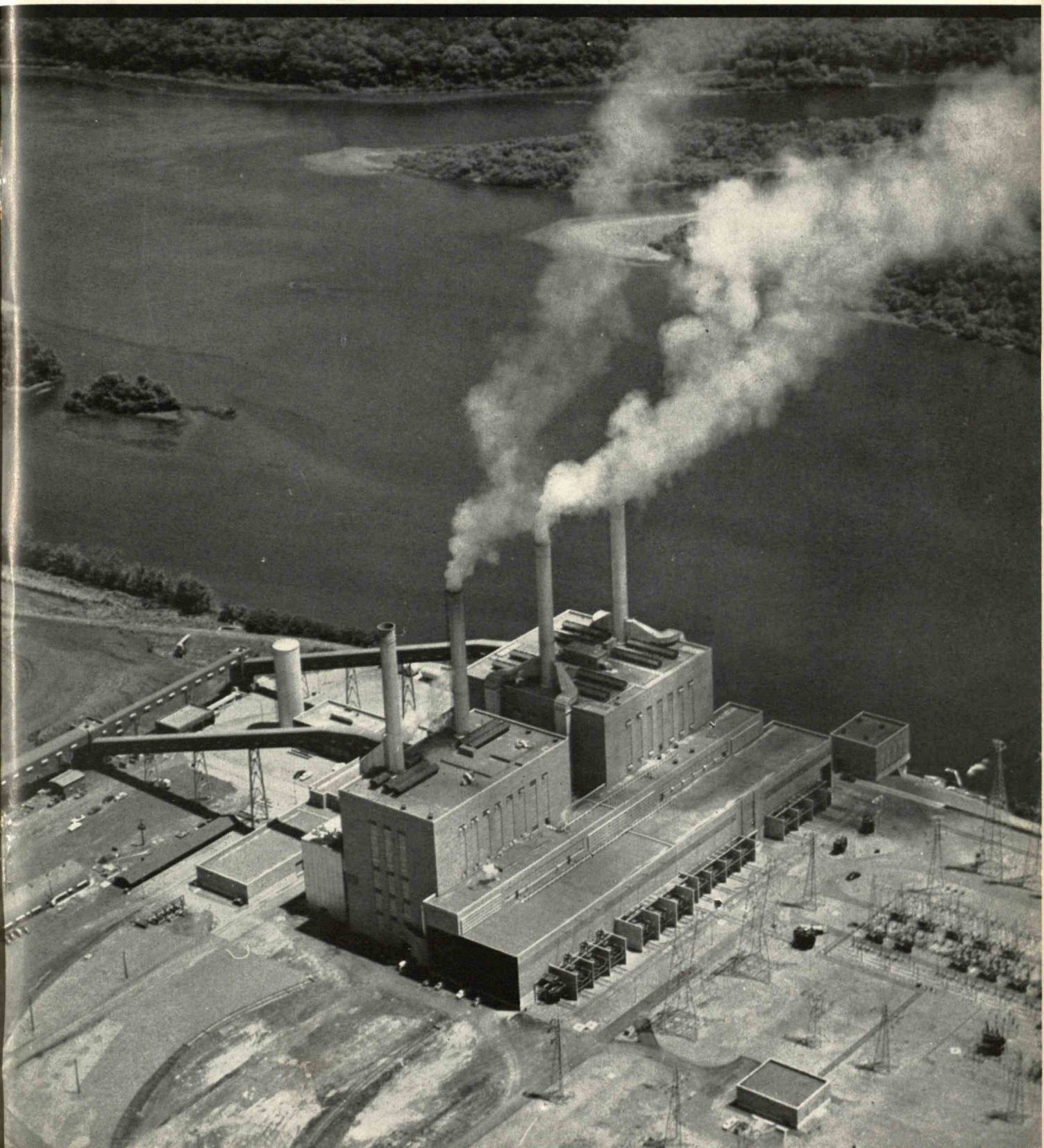


TECHNOLOGY

REVIEW *February* 1955



technology review

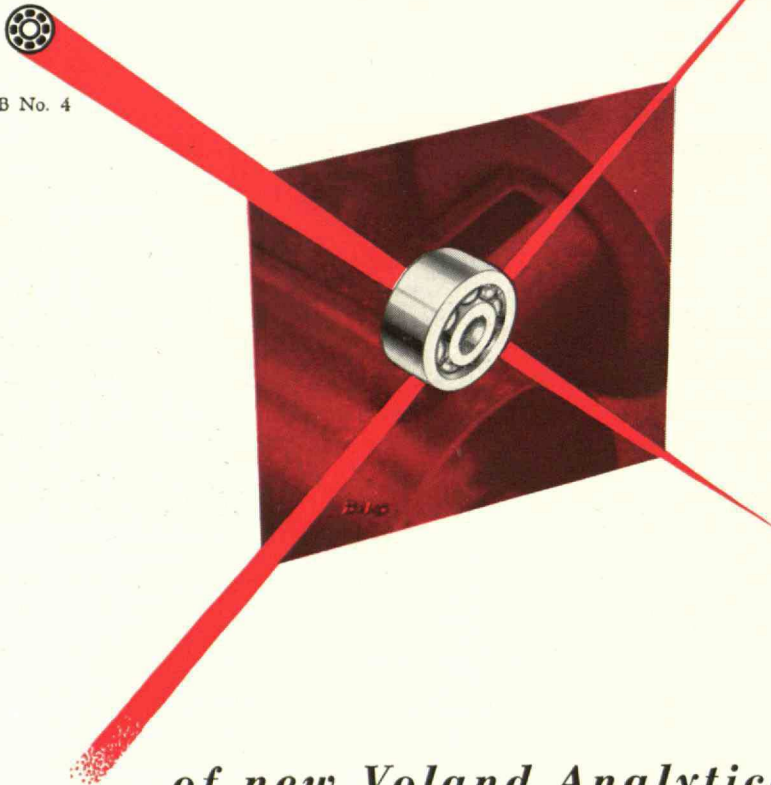
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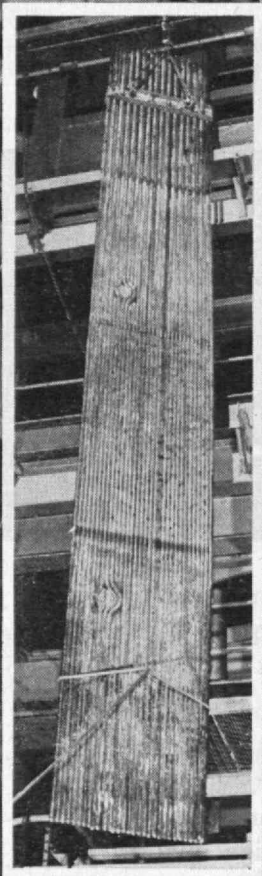
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THE TECHNOLOGY REVIEW, February, 1955, Vol. LVII, No. 4. Published monthly from November to July inclusive at Emmett Street, Bristol, Conn. Publication date: twenty-seventh of the month preceding date of issue. Annual subscription \$4.00; Canadian and Foreign subscription, \$4.50. Entered as second-class matter December 23, 1949, at the Post Office at Bristol, Conn., under the Act of March 3, 1879.

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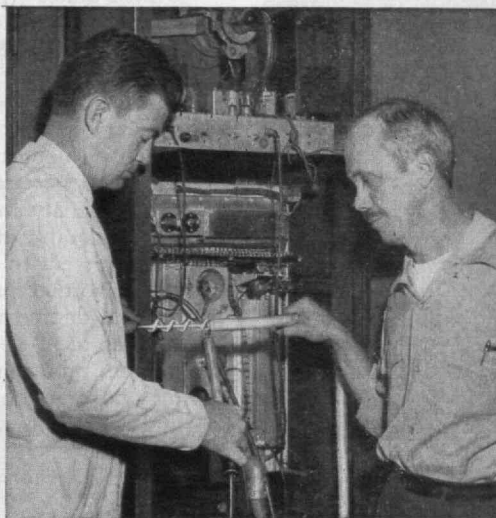
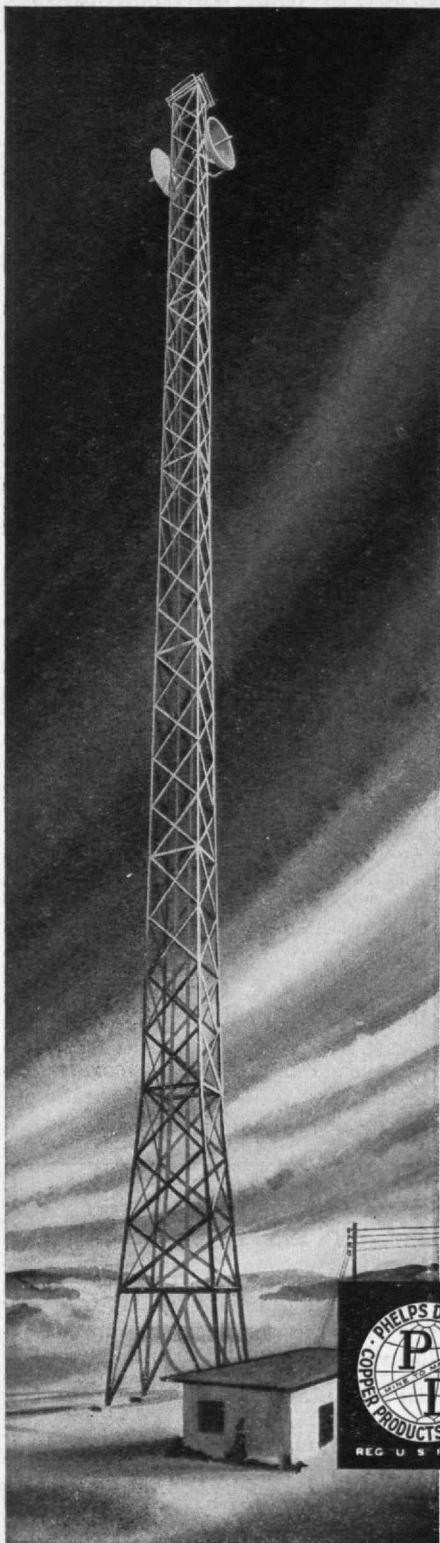
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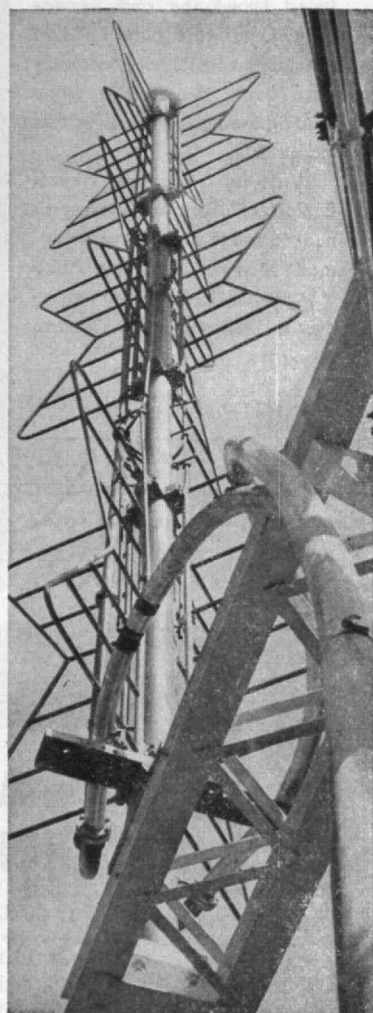


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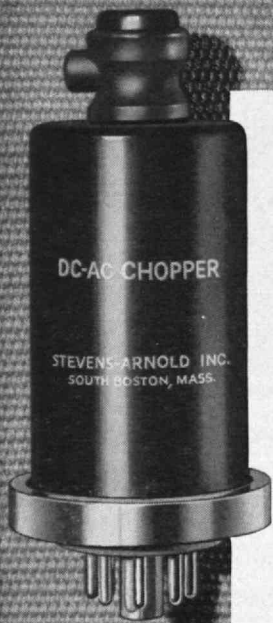
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THE TABULAR VIEW

Challenge.—Thrust into an unsought position of world leadership as the result of two World Wars into which it was forced, the United States is now the major power supporting a truly peaceful world composed of free men and free nations. As such, it faces a gigantic challenge in the military, political, and economic fields, from powers bent on world domination. The problems thus imposed on our nation are discussed in the "Challenge Facing the United States" (page 181) by WALT WHITMAN ROSTOW, Professor of History in the M.I.T. School of Humanities and Social Studies. Professor Rostow comes well prepared to deal with such topics, for his entire interesting professional life has been devoted to a study of history, economics, and international relations. Yale University conferred upon him the B.A. and Ph.D. degrees in 1936 and 1940, respectively. After a year of teaching at Columbia University and two years in the Army, from which he was honorably discharged with the rank of Major, Dr. Rostow went to England where, as Rhodes scholar and Harmsworth Professor of American History, he received an M.A. degree in 1946 from Oxford. In 1949 he received another M.A. degree from Cambridge University where he was professor of United States History. He served for two years on the Economic Commission for Europe, and since 1950 has been a member of the M.I.T. School of Humanities and Social Studies where, incidentally, Mrs. Elspeth D. Rostow is assistant professor of history.

Maturity.—The second and concluding part of an article, "Maturity through Student Counseling" (page 186), by DR. DANA L. FARNSWORTH describes the system of student counseling now in operation at the Institute. In the present system, which was developed while Dr. Farnsworth was head of the Institute's Medical Department, the difficulties which incoming students face in making the transition from preparatory school, or college life, are minimized through a counseling program that brings the new student into contact with Faculty members, as well as with upperclassmen, and makes full use of the principles outlined by Dr. Farnsworth in the January 1955, Technology Review. Dr. Farnsworth is a native of Troy, W. Va., and as recorded in his biographical data in this section of The Review last month (page 126), he was graduated from the Harvard Medical School in 1933. Technology's loss was Harvard's gain last summer, when Dr. Farnsworth became Henry K. Oliver Professor of Hygiene and Director of the University Health Services.

Logic.—The progressive standpoint (and especially the logical approach) which is a part of the stock in trade of
(Concluded on page 174)

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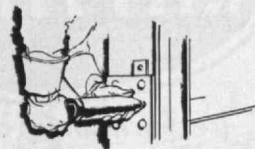
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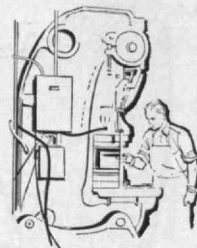
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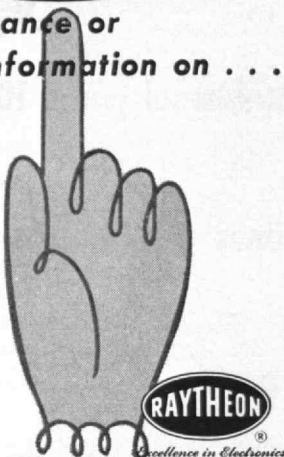


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THE TABULAR VIEW

(Concluded from page 172)

engineers—as a result of their professional training—is a valuable asset in public life. Engineers are called upon, in increasing numbers, to place their powers of logic, analysis, and objectivity at service in the public welfare through greater participation in political affairs. This exhortation is made in an article "Engineers in Politics" (page 189) by THOMAS C. DESMOND, '09, who was graduated *magna cum laude* from Harvard University in 1908 and from the Institute's Course in Civil Engineering the following year. For two decades, thereafter, he headed his own firm of consulting and contracting engineers, until his retirement from engineering work in 1929. Since 1930 he has been a Senator in the New York State Legislature, having recently been elected to serve his 25th consecutive year in that post. Senator Desmond was awarded the degree of doctor of humane letters from Union College in 1939. He has been active in alumni matters, a member of many Visiting Committees and, since 1941, has been a life member of the M.I.T. Corporation. Dr. Desmond's own engineering and legislative life lend convincing emphasis to the views expressed here.

Foresight.—There's more than meets the eye in the study (page 191) which FREDERIC W. NORDSIEK, '31, makes of human vision and the most common of optical aids—eyeglasses. Mr. Nordsiek, a skilled writer with more than 100 articles to his credit in the last decade, outlines the basic mechanism of human vision, discusses optical tests and methods of correcting the more common visual defects, discusses the assembly of eyeglasses—and sends the patient on his way with 20/20 vision. Mr. Nordsiek has been an editorial associate of *The Review* since 1944. Accordingly, he is well known to *Review* readers, not alone for the signed feature articles which appear in each volume, but also through the shorter, unsigned pieces in the *Trend of Affairs* section, which appear in almost every issue. Since his graduation from the Course in Biology and Public Health in 1931, Mr. Nordsiek has had a varied and interesting professional career devoted to various aspects of public health or the food industry. For the past several years he has been engaged in administering research grants for the American Cancer Society.

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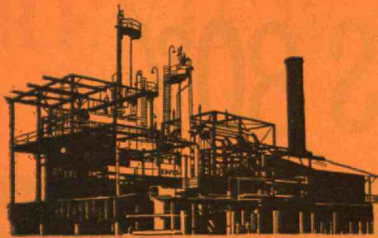
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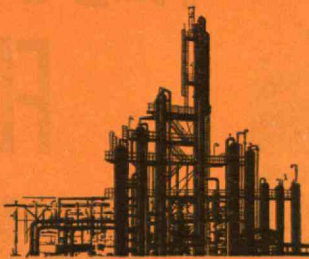
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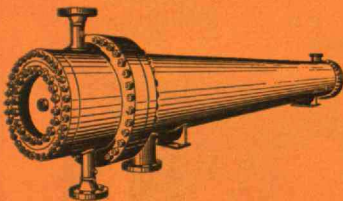


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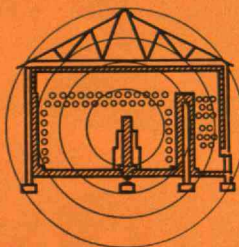


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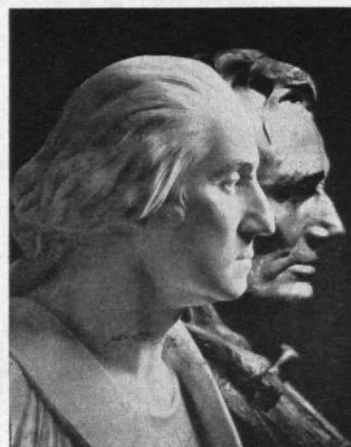
Super-Cushion, T. M.—The Goodyear Tire & Rubber Company, Akron, Ohio

THE TECHNOLOGY REVIEW

TITLE REGISTERED, U. S. PATENT OFFICE

EDITED AT

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY



Keystone View Co.

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Publisher:

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VOL. 57, NO. 4

FEBRUARY, 1955

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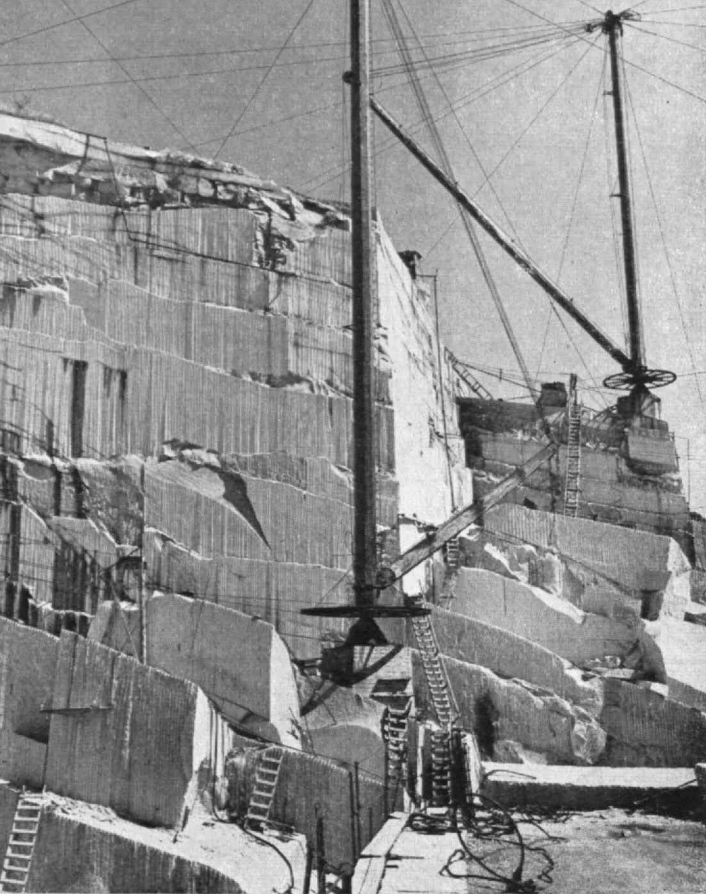
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Published monthly from November to July inclusive on the twenty-seventh of the month preceding the date of issue, at 60 cents a copy. Annual subscription, \$4.00; Canadian and foreign subscription, \$4.50. Published for the Alumni Association of the M.I.T.: Hugh S. Ferguson, President; H. E. Lobdell, Executive Vice-president; Richard S. Morse, Gilbert M. Roddy, Vice-presidents. Donald P. Severance, Secretary-Treasurer. Published at Hildreth Press, Inc., Bristol, Conn. Editorial Office, Room 1-281, Massachusetts Institute of Technology, Cambridge 39, Mass. Entered as second-class mail matter at the Post Office at Bristol, Conn. Copyrighted, 1955, by the Alumni Association of the Massachusetts Institute of Technology. Three weeks must be allowed to effect change of address, for which both old and new addresses should be given.



Ewing Galloway

The Builders

By Vannevar Bush

THE process by which the boundaries of knowledge are advanced, and the structure of organized science is built, is a complex process indeed. It corresponds fairly well with the exploitation of a difficult quarry for its building materials and the fitting of these into an edifice; but there are very significant differences. First, the material itself is exceedingly varied, hidden and overlaid with relatively worthless rubble, and the process of uncovering new facts and relationships has some of the attributes of prospecting and exploration rather than of mining or quarrying. Second, the whole effort is highly unorganized. There are no direct orders from architect or quarrymaster. Individuals and small bands proceed about their businesses unimpeded and uncontrolled, digging where they will, working over their material, and tucking it into place in the edifice.

Finally, the edifice itself has a remarkable property, for its form is predestined by the laws of logic and the nature of human reasoning. It is almost as though it had once existed, and its building blocks had then been scattered, hidden, and buried, each with its unique form retained so that it would fit only in its own peculiar position, and with the concomitant limitation that the blocks cannot be found

or recognized until the building of the structure has progressed to the point where their position and form reveals itself to the discerning eye of the talented worker in the quarry. Parts of the edifice are being used while construction proceeds, by reason of the applications of science, but other parts are merely admired for their beauty and symmetry, and their possible utility is not in question.

In these circumstances it is not at all strange that the workers sometimes proceed in erratic ways. There are those who are quite content, given a few tools, to dig away unearthing odd blocks, piling them up in the view of fellow workers, and apparently not caring whether they fit anywhere or not. Unfortunately there are also those who watch carefully until some industrious group digs out a particularly ornamental block, whereupon they fit it in place with much gusto and bow to the crowd. Some groups do not dig at all, but spend all their time arguing as to the exact arrangement of a cornice or an abutment. Some spend all their days trying to pull down a block or two that a rival has put in place. Some, indeed, neither dig nor argue, but go along with the crowd, scratch here and there, and enjoy the scenery. Some sit by and give advice, and some just sit.

On the other hand there are those men of rare vision, who can grasp well in advance just the block that is needed for rapid advance on a section of the edifice to be possible, who can tell by some subtle sense where it will be found, and who have an uncanny skill in cleaning away dross and bringing it surely into the light. These are the master workmen. For each of them there can well be many of lesser stature who chip and delve, industriously, but with little grasp of what it is all about, and who nevertheless make the great steps possible.

There are those who can give the structure meaning, who can trace its evolution from early times, and describe the glories that are to be, in ways that inspire those who work and those who enjoy. They bring the inspiration that all is not mere building of monotonous walls, and that there is architecture even though the architect is not seen to guide and order.

There are those who labor to make the utility of the structure real, to cause it to give shelter to the multitude, that they may be better protected, and that they may derive health and well-being because of its presence.

And the edifice is not built by the quarrymen and the masons alone. There are those who bring them food during their labors, and cooling drink when the days are warm, who sing to them, and place flowers on the little walls that have grown with the years.

There are also the old men, whose days of vigorous building are done, whose eyes are too dim to see the details of the arch or the needed form of its keystone; but who have built a wall here and there, and lived long in the edifice, who have learned to love it and who have even grasped a suggestion of its ultimate meaning; and who sit in the shade and encourage the young men.

THE TECHNOLOGY REVIEW

Vol. 57, No. 4

February, 1955



The Trend of Affairs

Peppery Retort

THE condiments used at dining tables appear to follow cultural patterns. Thus, on oriental tables, is always found a bottle of soy sauce; in America, no table is complete without a salt shaker and a pepper shaker.

Salt, besides having a pronounced effect on the flavor of foods, serves an important nutritional function as a source of sodium ions. All mammals require an intake of sodium. Thus herbivorous animals, whose plant foods are low in sodium, must find access to salt licks in order to maintain well-being. Carnivorous and omnivorous animals, including the human being, ordinarily receive enough sodium in their foods, even without added salt. Indeed, human beings who suffer from certain illnesses, such as particular disorders of the cardiovascular system, may find it necessary to reduce their intake of sodium by eliminating added salt from the dietary.

Pepper has no nutritional value; it is used for purely gustatory reasons. Does pepper really promote the acceptability of foods, or are the casual sprinkling of pepper over the dinner plate and the usual addition of a dash of pepper during cooking purely traditional? This is a practical question to manufacturers of prepared processed foods, who need to know whether consumer acceptance of their products may be enhanced by judicious incorporation of pepper.

The question has now been clearly answered by a recent taste-panel study, using standard blindfold taste-testing methods, with results analyzed by statistical procedures of established validity. Thirty-two common foods were studied, falling into the categories of processed meats, soups, salads, vegetables, and miscellaneous foods. Foods prepared without pepper were compared with the same foods made

with pepper, in concentrations determined by military or industrial specifications if available, otherwise set by the judgment of trained home economists.

For only seven of the 32 foods was there preference for those with pepper. These were Bologna, liver sausage, pork sausage, bean soup, chicken soup, vegetable soup, and fried haddock. With the remaining 25 foods, there was no significant preference between the peppered and unpeppered samples.

These results suggest that in many common American foods, at least, pepper is used only by blind custom and never would be missed were it omitted. Furthermore it appears that the hardship we all felt because of pepper shortages during World War II may have been quite irrational.

Nomographic Aid

SCIENCE and engineering are necessarily concerned with physical entities, quantitatively related. Consequently, mathematics in one form or another occupies a good deal of time of workers in technical fields. Those mathematical operations which lead to creative concepts must necessarily be done by exercise of human brain power, but the routine computations that lead merely to numerical results should occupy a minimum of time of trained personnel.

All engineers and scientists are familiar with the more usual forms of alignment charts in which numerical results may be obtained by reading the calibration of a line at the point where a straight edge, properly placed with respect to other calibrated scales, intersects the line. Sometimes, technical personnel have constructed nomograms to facilitate necessary computations. Too often, a stumbling block to the design and construction of more of these useful nomograms has been acquisition of the mathematics needed for their construction.

A simple method of constructing nomograms from mathematical data or empirical charts, by a quick process requiring no knowledge of the mathematics of nomography, has been developed at the Institute by Douglas P. Adams, Associate Professor of Engineering Graphics. The method is quick, uniform, and as accurate as the original data and the care with which the draftsman works. Essentially, the method which Professor Adams has devised is a graphical means for transforming lines on a graph or network chart into corresponding points on an alignment diagram. There is ample mathematical justification for the graphical transformation which Professor Adams has devised, but the manner of use is free of mathematics. Another advantage is that the technique is applicable to problems in which quantitative relationships are known only empirically. The transformations required to convert a network chart into an alignment diagram, or vice versa, are made through use of a transparent plastic sliding sheet which can be readily prepared and is basically the same for any chart to be converted.

When an ordinary network plot consists of straight lines, the derived alignment diagram contains at least two straight parallel scales. When the network plot cannot be made to consist solely of straight lines, a "quasi-alignment" diagram results. The graphical method is also applicable to the most general type of network chart and then yields the most general type of alignment diagram.

Throatless Press

CONVENTIONAL forging presses utilize massive tension ties which connect the head and base, thereby providing the necessary reactions to the press forces. As the press capacity is increased, the head, base, and tension rods become very large and, for conventional presses illustrated in Fig. 1, practical problems of manufacturing and shipping the massive elements required create an upper limit to the capacities that can be realized. The largest known press of this type has a capacity of 50,000 tons.

For certain forging processes, the relatively narrow space between tension rods, called the throat, is disadvantageous. Yet the size of the throat, in conventional presses, is limited by the maximum practical dimensions of the press components.

To remove the present ceiling on press capacities and to overcome the operational disadvantages of the narrow throat of conventional presses, the structure of Fig. 2, originally conceived by C. A. van Dusen, has been developed. Here, the weight of a very massive concrete roof provides reaction to the press rams. When the press is not in operation, the entire mass of the roof is supported by two concrete walls which transfer this load to the foundation below. The clear distance between walls is very large, and the working space for forging operations is completely unrestricted.

The large size and unusual proportions of the throatless press introduce a number of unusual—if not unique—design features, and cause uncertainty regarding applicability of conventional methods of stress analysis and design. To study the distribution

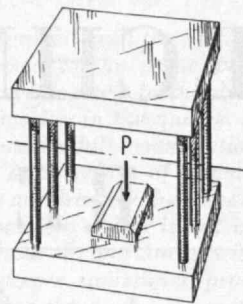


Fig. 1, at left, displays structure of usual press, with narrow throat limiting size of work.

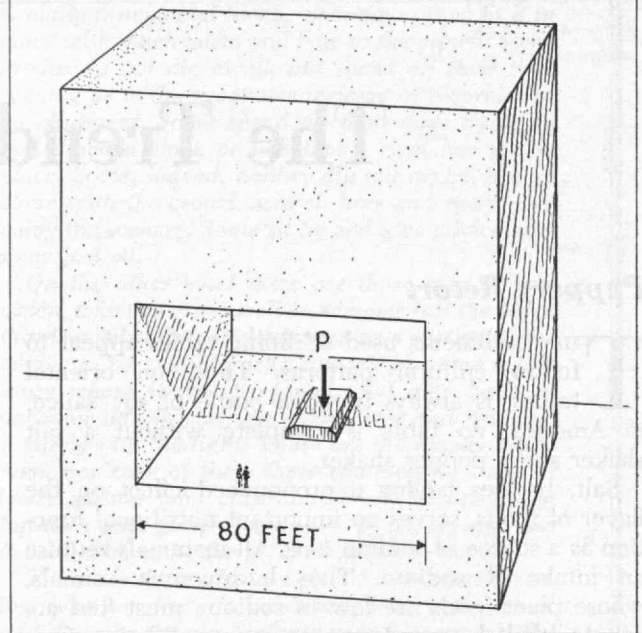


Fig. 2, below, illustrates throatless press which can be made in sizes sufficiently large as to exceed capacity of conventional heavy presses.

of gross forces and unit stresses throughout the structure—and particularly within the roof mass—photoelastic analyses were carried out in the Institute's Department of Civil and Sanitary Engineering. The investigation was performed by Robert E. Jones, '53, research assistant, and Y. C. Loh, research engineer, under the direction of Myle J. Holley, Jr., '39, Associate Professor of Structural Engineering. The investigations were sponsored by the Austin Company, co-owners with the Hydraulic Press Manufacturing Company of the Throatless Press Company.

Two dimensional photoelastic analyses were performed to determine gravity load stresses and approximations to press load stresses. The stresses in three dimensions, under press load, were studied by measurement of surface strains on a Lucite model. The two-dimensional approximation of press loading was also studied by means of a lattice analogy solution for which computations were carried out on Whirlwind—M.I.T.'s high-speed digital computer.

The results of this investigation verify the structural feasibility of the throatless press and should prove of value in final design and construction of prototype structures whose capacity exceeds that of conventional heavy presses.

Challenge Facing the United States

*We Have the Heritage of Ideas and Idealism,
the Resources, and Talents Needed to Frustrate Communism*

By WALT W. ROSTOW

This article was delivered as an address at the Naval War College at Newport, R.I., on August 25, 1954. Since that date a number of events have occurred—notably French acceptance of the Western European Union—that relate to this article. The text has not been altered, however, and, in the author's view, the line of argument developed here is still valid.—Ed.

THE challenge facing the United States is, in its essence, simple: can we prevent the enemy from fulfilling his intention? His intention is to drive the United States from power and influence in Eurasia; to isolate the United States on this continent; and to deal with us in his own good time from the preponderant base he would then control.

Is the enemy making progress toward his goal? He is clearly making important progress. What do we see as we look about the world? The enemy has apparently developed a capability to threaten the United States with grievous damage; and he has put himself in a position to blackmail our virtually defenseless allies with atomic attack and national destruction.

One of our major allies — France — has accepted terms of limited defeat from Communist China, thus exposing for infiltration or worse a major strategic area embracing India, Burma, and Indonesia. At just this moment the governments of those three vulnerable countries show signs of rejecting our world leadership and of seeking terms of accommodation with Communist China.

Japan, the Free World's major power base in Asia, is wracked by a chronic economic crisis, which rules out, for the time being, her assumption of appropriate responsibility — political and military — in Free Asia.

In the Middle East and in Africa conflicts long latent threaten to erupt, which the enemy has the intent and capability to exploit.

In Europe, European Defense Community, the mutual defense system we have long sought as an essential condition for European unity, seems on the verge of abandonment.

And finally, despite recent efforts, it is clear that the governments of Great Britain and the United States — inevitably the core of such Free World unity as there is — view this series of circumstances with different eyes and find the greatest difficulty in making common cause from day to day.

The unfavorable turn of events abroad in recent months has set in motion here at home an understandable but dangerous sense of frustration and hurt feelings — a tendency to blame our allies, who are indeed not blameless, and to look to more national

solutions to our security problems. We are, as a nation, a bit disheartened with the policy of Free World coalition. This is reflected in American words and deeds abroad which push our allies further from us. And so, with a sharpened sense of vulnerability and fresh doubts of American purposes, they look weakly and somewhat pathetically to Moscow and Peking for amiable gestures which, costing nothing, are not denied them.

It is not too much to say that the designation of the United States as leader of a Free World may become an empty figure of speech if recent trends persist. We are threatened with an isolation brought about not by our own conscious decision but through an interacting process, involving in part the rejection of American leadership by our allies, in part the turning of the United States away from a coalition policy. Our feet are on the road — not far, but on the road — to becoming an awkward island off the mainland of Eurasia, thus fulfilling the basic intention of Moscow and Peking.

The enemy's challenge is not only real and immediate, it strikes at the heart of our national interest and our national security. Our national interest is to preserve and to develop in this republic a society based on the fundamental principles of individual freedom within the range permitted by government by consent. Our job is not merely to protect the handsome real estate which is our physical base; it is to preserve the still developing way of life which is the heart and meaning of America. Military means are, of course, absolutely essential to protecting our society; but if we are driven back to island status in a hostile totalitarian world, much if not all, of our national interest would be lost quickly — even without military defeat. Our kind of open society demands an environment of open societies about us, notably in a world of modern communications and modern weapons.

These are, then, the fundamental propositions: we are challenged by an intent to drive us from Eurasia; the enemy is making important progress in this direction; and this is a mortal challenge for the United States.

The general challenge we face has three specific dimensions: military, political, and economic. Each, in turn, will be dealt with briefly.

The military challenge comes to this: can we prevent the enemy from expanding his area of power in an age when he, as well as ourselves, has atomic weapon delivery capabilities sufficient to damage or to destroy whole societies?

It should have been clear from the beginning in 1945 that atomic weapons would constitute a transient and limited contribution to the security of the United States. It should have been clear that if we developed such weapons our potential enemies could and would also develop them. Atomic weapons carried with them a threat for the United States new in our history, new at least since the War of 1812; namely, that our enemies could inflict directly upon us grievous damage. It should have been clear that future major wars, if they came, would not be fought wholly on the territory of other peoples. In any case, it is now abundantly clear that the United States must live in a world of physical danger and insecurity, at least until effective disarmament is installed on a world basis.

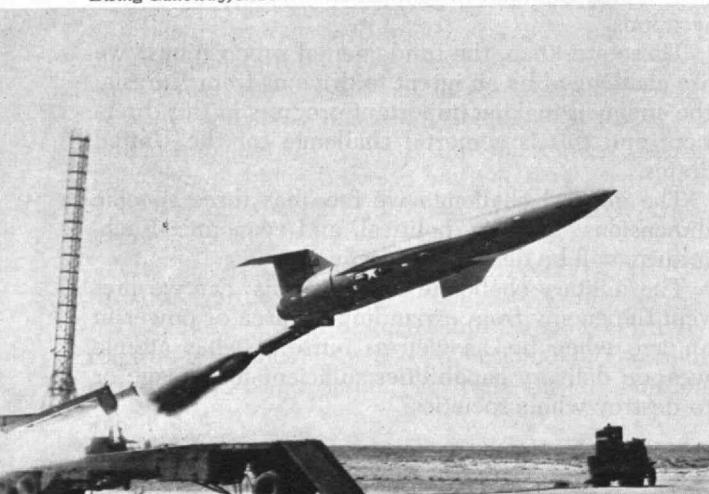
This does not mean, of course, that our atomic weapons are unimportant to security; nor that the degree of our danger is wholly outside our control. There is much to be done.

The maintenance of atomic weapon delivery capabilities, of the kind we now apparently have, can deny to any enemy, not bent on suicide, his ability to use them against us. The maintenance of this capability is not a static thing. The weapons, the means of their delivery, the means of defense are under constant development and change.

Until the very day — until the very day — when effective international controls are installed, we must maintain our ability to deliver overwhelming national disaster on our enemies and we must minimize his ability to damage us and our allies. This is an endless job in the world in which we live — a job not merely of allocating money and producing gadgets, but a job for creative scientists. And we must take great care that their contribution is woven positively into the tasks of national defense; for it is the essence of atomic weapons and their delivery that our capabilities are not a simple function of our steel capacity or of our industrial potential in general. They are and will remain a function of the best creative and original scientific achievement we can bring to bear on highly special tasks. We can maintain our capability for the long pull only if we recognize this fact and avoid technical complacency.

Unfortunately, military power is still essential for the protection of our society. . . .

Ewing Galloway, N.Y.



But a successful counter to our enemy's atomic weapon delivery capabilities is the beginning, not the end, of the military security task. Our enemy has noted that we have come to regard atomic weapons as our main strength. Just as the Russians worked around, blunted, and defeated Hitler's main strength — his ability to penetrate Russia with armored divisions — so they are seeking to work around our atomic weapon delivery capability by diplomacy, blackmail, subversion, and limited military operations which afford neither satisfactory atomic weapon targets nor a political setting in which we can find it possible to launch a direct attack upon the centers of Communist strength.

Here, then, is our major unsolved security problem: within the framework of our atomic weapon delivery and defense capabilities, how can we develop the forces to frustrate and ultimately to dissipate the threat presented by the Soviet and Chinese Communist power?

This problem has absolutely essential political and economic components: but it has a technical military side which deserves the most creative thought we can bring to it. Here, then, is the military position:

First, the enemy is extremely anxious to avoid the application to his structure of our weapon delivery capabilities. They carry to him a peculiar threat, not duplicated in the United States. These weapons threaten the continuity of his rule over his existing bases. With will and leadership our society would re-erect itself after atomic attack. The continuity of Communist rule in Russia and China is threatened by such an attack. This is a potential source of strength to us in the test of will with which we live.

Second, while the United States wishes to avoid atomic attack, it must and should be prepared to face it rather than surrender. But our major allies in Europe and Asia, less protected than ourselves, will go to the greatest lengths to avoid such attack. It is a blunt truth, which we had better face quickly, that "massive retaliation" is incompatible with coalition strategy and perhaps incompatible with the maintenance of American power and influence in Eurasia, if — I repeat, if — it is the sole foundation of our military policy.

Third, we must, therefore, find ways of coping with the enemy's challenge by means short of our ultimate weapons, if our aim is to maintain our coalition and to stay in Eurasia. We must avoid situations where the enemy's limited aggression in Eurasia can only be met with our ultimate weapons, and the citizens and governments of the Free World in Eurasia are openly or covertly blackmailed into accepting limited defeat, rather than permitting us to use those weapons.

Fourth, in the last analysis, we must be prepared to confront the enemy with superior relative delivery capabilities, as a deterrent, and to fight and win a war with the ultimate weapons — if necessary on a bilateral basis — should his irrational action detonate a war.

Let me state this as plainly as I can. It would be a disaster to the American interest if we now took the view that we must simply prepare for the ultimate war; step by step this position leads to our isolation on this continent; that is, it leads to the achievement

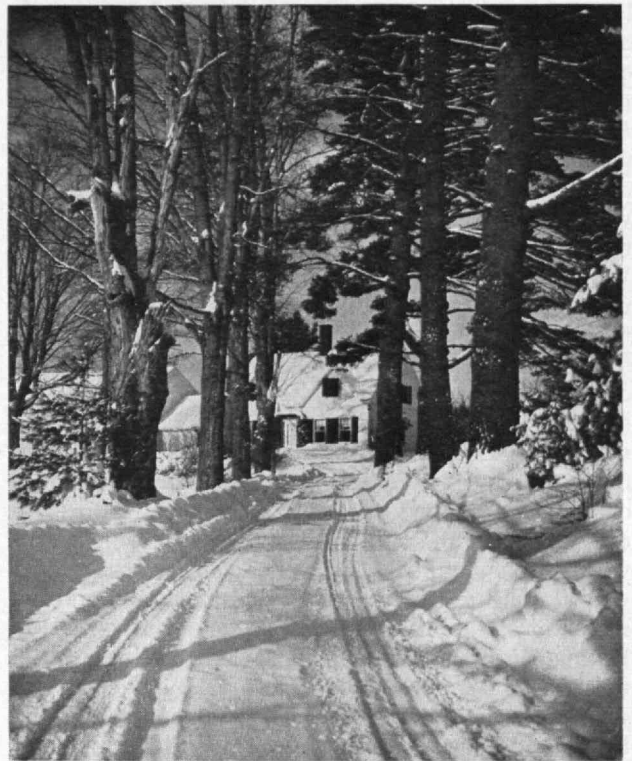
of the enemy's objective. It would equally be a disaster if we did not maintain the capability to fight such a war to victory; for we could be bluffed to defeat or actually defeated. We must bend our energies to coping with the enemy's military threat by means short of ultimate war, holding our coalition together, holding the balance of power in Eurasia, while still maintaining a framework of superiority in delivery capabilities in the ultimate weapons.

What specifically do I mean by military means short of our ultimate weapons? First, in Europe, sufficient tactical strength — ground, naval, and air — to rule out a Soviet blitzkrieg to the Channel. I cannot pretend to full knowledge of the capabilities position in Western Europe; and I make the following observations with some reserve. But I do profoundly believe that Western Europe and the United States have the man power and resources to construct and maintain an effective screen against Soviet ground strength; for that strength in Central Europe has grave limitations as an offensive instrument. It is far from its production bases; its supplies must pass through territories which would demand in war enormous troop allocations to assure lines of supply; Eastern Germany is, from Moscow's perspective, a forward base subject to dangerous flanking operations from the Mediterranean. This is not startling news. Let it be simply emphasized that the popular conception of a Soviet ground horde poised in Central Europe, beyond our capabilities to match or to contain, is not accurate. The problem of protecting Western Europe on the ground is a problem of will and purpose and, to some extent, a problem of economic resources. It is not primarily a problem of overwhelming enemy capabilities.

Second, and probably more urgent, the Free World must develop in Asia notably, but elsewhere as well, new methods for coping with guerrilla and other limited operations, where the enemy's troops are apparently not engaged. Such operations usually reflect — as in Malaya and Indo-China — a weak Free World political base. But we live in a revolutionary world, where rapidly changing societies may well be weak and vulnerable to the enemy's methods of aggression. It should be one of our basic purposes to prevent situations from degenerating to the point where guerrilla and other limited operations can take effective hold. Nevertheless, we must be prepared to deal with them effectively, where they arise.

The challenge put to professional military men is the building of new techniques of limited warfare — including the limited use of atomic weapons — capable of containing the enemy's superior ground forces, just as our atomic weapon delivery capabilities contain his delivery capabilities; and of developing new techniques for dealing with limited forms of warfare, where these break out, as a result of the enemy's method of political subversion and guerrilla operations, in weak areas of the Free World.

This policy of military frustration throws fresh burdens onto our political and economic policy. These burdens are inevitable; that is, we cannot sit back comfortably and rely on "massive retaliation," for in the present state of the world that means the acceptance of defeat, the acceptance of United States isolation. Just as the civilian has a right to challenge



H. Armstrong Roberts

... but our real task is to preserve the still developing way of life which is the heart and meaning of America.

the military with fresh thought on forms of limited warfare, the military has the right and duty to challenge the civilian to produce policies which will bind up the Free World effectively, maintain its political and economic health, and to avoid if at all possible the degenerate situations where military instruments must be evoked.

Nowhere is this view of the link between our political and security problems more clearly justified than in Asia. France and the Free World have suffered major defeat in Indo-China not merely because Soviet and Chinese arms crossed the Indo-China frontier. We have suffered defeat because France so conducted its political affairs in Indo-China that the peoples of that region would not rally to defend themselves against a Communist-dominated movement acting in the name of national independence. The Free World defeat in Indo-China was primarily a political defeat; and there will be no wisdom in our Asian policy unless we accept this fact. Nor can we blame this recent defeat wholly on the French. We backed with our money their Indo-China effort, knowing its weak political foundations, hoping for the best against our instinct and the facts. We had every reason to know from ample postwar experience that colonialism is an impossible base from which to fight Communism. We must not conceal our part in the common failure. If we acknowledge it maturely, we can go on to build a policy in Asia which will serve our own interests and those of the Free World.

I believe we can erect a united Free World policy in Asia because I am convinced that what the Asians want and what we want in that region largely over-

lap. By and large they want the time and framework of security to make good their freshly won independence in terms of economic development and domestic reform. Rightly or wrongly they interpret recent American policy as a negative obsession with the Communist menace; as a threat to the peace; and as a dangerous distraction from their own urgent tasks. To work with them we do not need to accept their sometimes myopic assessment of the Communist menace. We do need to align our energies and an increased margin of resources with the challenging tasks of economic and social transformation which engage them.

Beneath the surface of recent events there can be detected an increasing awareness in southeast Asia of the potential military menace of Chinese Communism. It was clearly reflected, for example, at the recent Ceylon Conference, and in Chou En-lai's reception at Rangoon. India and Burma have already exhibited a remarkable sensitivity to Communism within their countries, as well as an ability to deal with it. And given time, they will make a sound assessment of the international menace represented by Peking. But this they must come to themselves. In the meanwhile we have a very great stake indeed in the success of their economic and social policies. India, Burma, and certain other nations of the Far East are seeking to transform their societies into modern, growing nations by democratic political techniques — with the methods of consent — maintaining the concept of the integrity and inviolability of the individual human being.

Up in the North the Chinese Communists have launched an economic plan which seeks to reproduce on the Asian scene the transformation painfully wrought in the Soviet Union in Stalin's First Five-Year Plan. It is being conducted in China with a human ruthlessness which matches its model.

The political and military future of Asia is likely to be determined at least as much by the relative outcome of the Indian and Chinese economic efforts as it is by the strictly military events of the next decade. This does not mean that we should abandon the attempt to bring into being a collective military alliance in Asia, or that we should abandon our bilateral efforts to strengthen the effective military strength of Free Asia. On the contrary we need such an alliance and such bilateral undertakings, and the commitment of cope with a commonly understood danger which underlies them. It does mean that we should not confuse such military arrangements with a total Asian policy; and that we should be prepared to enlarge our co-operation with the developing areas of Asia, whether or not they are prepared now to join in a required military alliance, or in bilateral military arrangements with us.

Into such a sustained constructive effort the United States should be prepared to throw increased resources, increased technical and scientific skill, and perhaps most important, increased human understanding and moral support.

I might add that only substantial economic growth in Free Asia as a whole will create an environment within which Japan can solve its most serious balance of payments difficulties and attain the self-supporting status its great energies and talents deserve,

and the development of its political and military potential demands.

The problems we confront in Asia differ only in degree and urgency from those we confront in the rest of the world. In the Middle East, in Africa, and on our own doorstep in Latin America the horizon of ambition of men and women has lifted. They want and expect for themselves and their children not merely increased material welfare, but increased personal and national dignity. There is no doubt at all that historians of the second half of the Twentieth Century will mark as its central feature this massive human awakening to the best, and sometimes the worst, values of Western civilization.

Anyone who has had even a slight connection with our postwar affairs knows that this revolution in human expectation raises difficult day-to-day problems for American policy making. Revolutions refuse to behave like well-run corporations. There has been and there will be plenty of difficulty in the process of transformation now proceeding all around us.

But we Americans should welcome this transformation and align our national policy with it. For the combination of human dignity, national independence, and material advance which men and women now seek with increased vigor are precisely the things for which the United States has long stood and for which our society at its best still stands.

To align ourselves with the revolutionary transformations now proceeding will take more than an economic policy, more than money and technical assistance. We must take an active part in engineering the transformation towards independence in those areas where colonialism still exists. There are no easy and automatic formulas here. Independence cannot come everywhere tomorrow; and the job of making healthy free societies does not end with a formal achievement of independence. But the active weight of the American influence must be steadily directed towards hastening the process of responsible independence by peaceful transitional measures.

We must be energetic before grave crises are upon us in these revolutionary areas of the world. That is the true lesson of Indo-China. There are ample warnings in Africa and elsewhere which we should now be heeding.

What has already been said implies that the United States requires a new economic foreign policy to match the military and political policies needed to maintain a Free World coalition and to hold a balance of power in Eurasia. When we think of economic foreign policy we tend to think of the ancient subject of tariffs, on the one hand, and the modern subject of United States gifts abroad, on the other. Lower American tariffs and the use abroad of America's economic resources have a place in any foreign economic policy for this period of our history worthy of the name. But there is more shape to the economic problem of the Free World than is generally realized; more fresh thought required; and more unexploited possibilities.

Basically, we face in the Free World two economic problems; and the central task of United States economic foreign policy is to so marry these two problems as to make them mutually supporting assets.

One problem is that of the industrialized areas in the Free World, the problem of Britain, Germany, and Japan. They require expanding markets for their manufactured exports and expanding sources of foodstuffs and raw materials coming from places in which they can sell their own goods.

The second problem is that of the underdeveloped areas of the world which seek to develop and modernize their economies so that they can attain self-sustaining growth.

The answer, broadly speaking, is obvious enough. The underdeveloped areas must grow fast enough so that the Free World offers adequate markets for the industrialized countries; the underdeveloped countries must include within their development programs not merely new industries, but enlarged output of goods which are needed in Germany, Britain, and Japan; and the industrialized countries must provide the sustained flow of technical assistance and capital equipment to bring about this balanced growth.

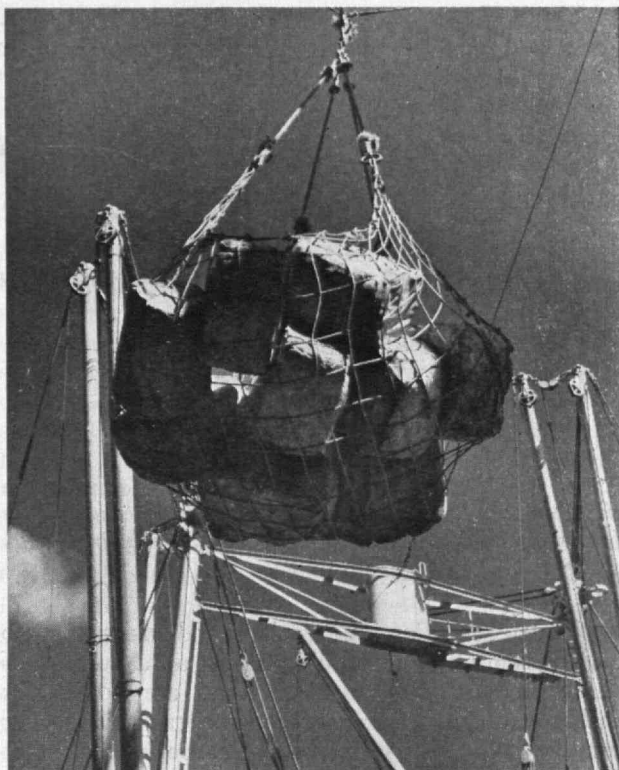
In making such a partnership for balanced growth in the Free World, the United States has a decisive role to play. It must generate and export increasing amounts of capital, both to accelerate economic growth in general and to increase the output in the Free World of the foodstuffs and raw materials the Free World's industrial areas require. It must continue unrelentingly the battle to lower tariffs and make the American market a more vital element in the Free World economy.

Specifically we must now launch and sustain a major new investment program in the Free World — truly an investment, and not a give-away program. A large part of the growth problem does not depend on capital at all. It depends on the will of men to undertake new productive tasks; on their energy; on their technical ability; and on their managerial ability. We can contribute something substantial in these directions through technical assistance; but the job must take place basically in the developing areas. Beyond this, a sustained flow of United States investment capital could help mightily, both in itself and as a stimulus to further efforts within the developing economies.

In order to justify a program of this kind we must bear in mind that economic foreign policy is not an instrument designed merely, or even primarily, to advance the American economic interest; although a foreign investment program of this kind is much to the nation's economic advantage. Its primary purpose is to help the nations of the Free World achieve that material progress which is essential for the highest purposes we share: human dignity, national self-respect, and the maintenance of societies worth defending.

Given the nature of the enemy's methods of infiltration and subversion, and the relation between economic progress and political viability in many areas, there is a direct and vital link between our military problem in its narrow sense and a program for economic growth in the Free World.

But what of the situation in the camps of our enemies? Is there any assurance that if the United States should now strike out along those lines that Communist military efforts could be frustrated and



Ewing Galloway, N.Y.

The primary purpose of our economic foreign policy is to help the nations of the free world achieve that material progress which is essential for human dignity, national self-respect, and maintenance of societies worth defending.

Communism itself defected in a political and economic contest? I believe there are ample grounds for such assurance.

In the Soviet Union, Stalin's successors are caught up in his heritage of overconcentrated power, a distorted economy, and a smoldering empire. There is powerful resistance among the generation of bureaucrats raised up by Stalin to accepting another all-powerful dictator. But they confront the dilemma of limiting the powers of the secret police over themselves without loosening the hold of the Kremlin over the restless Russian peoples.

Grave problems beset Soviet agriculture whose solution in fact requires that the stultifying framework of political and social controls over the Russian peasant be altered. Although Stalin's successors have publicly exposed the problem of agriculture, they have not been prepared to take the profound steps required for its solution.

These men have on their hands the massive, wasteful system of forced labor, a monument to the momentum and vested interests of a police state at its worst. They know its costs; but to dismantle it would disrupt the system of rule they still operate, and challenge its basic power precepts and methods.

They confront Stalin's heritage in the satellites as well. Moscow took each logical step toward total power in eastern Europe; but now it faces the costs and dangers of its position as a universally hated occupying power, a technique of imperial rule notably insubstantial for the long pull.

(Continued on page 208)

Maturity through Student Counseling—II

The System of Counseling Now in Vogue at M.I.T.

Brings the Incoming Student into Contact with

Faculty Members as Well as Upper Classmen

By DANA L. FARNSWORTH

Part I of Dr. Farnsworth's article, which appeared in the January, 1955, issue of The Review, discussed the forces affecting the development of maturity in college students.

THE assumption that teaching and counseling are essentially one process brings up a number of fundamental questions that are sometimes rather disturbing. For instance, an occasional teacher may be somewhat concerned because he feels that he has bargained to teach mathematics or physics and has not included in his thinking the idea that he is probably going to have to teach students as well. The idea that the counselor is a specialist in indirect education violates some of the traditional concepts of teaching which are held by many people. Some may feel that attention to the individual means that less emphasis is going to be placed upon subject matter. The concept that attention to the individual is designed to help free him from distractions in order that he may work more effectively is not accepted by everyone. It is a shock to some faculty members to realize so bluntly that what they do, say, read, wear, enjoy, and every aspect of their manner and behavior affect their students so directly and strongly. It is not exaggeration to say that, for the first year or two a counseling system is in effect, the counselor himself probably gets more out of his new activities than the person who is assigned to him.

Before proceeding further with a discussion of some of the theoretical and practical aspects of counseling, the writer will sketch briefly the system with which he is most familiar and which at least seems to be working with some degree of satisfaction.

The system of student counseling now in vogue at M.I.T. is made up of two parallel but co-operative parts. The first of these involves the Faculty, and the second, senior or junior undergraduate students. The original plan was devised by a Faculty committee, working in co-operation with the office of the Dean of Students and other administrative officials. At present it applies particularly to the first year class. Faculty counselors, 62 in number, are chosen from a list submitted by the head of each department and made up of those persons who are willing, and, in some cases very desirous, of doing this work. Each individual Faculty member is assigned no more than 15 students. The great majority of the counselors are of professorial rank of one or the other of the three

grades. During freshman orientation week the counselor sees his students in a group, usually in his office; he may see them once in a social situation and for the most part sees each one of his students separately. He also serves as registration officer for the freshman. After school officially opens, he is then available at a set time each week for his advisees to consult with him upon any issues that may come to their attention. The mid-term grades which were formerly sent directly to the student or to his parents are issued through the Faculty counselor, thus creating a reason for a contact under very normal circumstances.

Since the whole body of Faculty counselors known as the Freshman Advisory Council is too large to have frequent meetings, an executive committee is elected from this group, consisting of about 12 members, each one of whom represents four or five other Faculty counselors. The Council is presided over by a professor who is chairman of the Council and is aided in his work by an executive officer, who is an assistant professor. In addition, there is an executive secretary for the whole counseling system, who maintains an office which serves as a central clearing house for the exchange of information, for referring a student to someone in a special field and for solving the many complicated and perplexing questions that arise from time to time. The Executive Council meets at periodic intervals, usually about every two or three weeks, to discuss any questions which may come up regarding the students themselves or regarding the mechanism of the counseling program. In addition, a series of meetings are held, usually from seven to 10, during the year, which may be attended by any member of the Freshman Advisory Council or by the registration officers of the three upper classes. At these meetings typical situations that arise from time to time in counseling interviews are discussed. These discussions may be led by one of the Faculty members, by a member of the psychiatric service, by Faculty members from other schools who are interested in student counseling problems, or by anyone who may have any special point of view to present.

The student part of the counseling system is not as well organized as yet as the Faculty portion. A corps of student advisers is chosen by representatives of student government from volunteers. A meeting of all the advisers is held early in the term, at which various speakers from the student body and from the Faculty explain some of the philosophy of student

counseling, common problems that are likely to be encountered, the resources available in the Institute for those students who have difficulties, and questions are answered. There is a student advisory council somewhat similar to that of the Faculty Freshman Advisory Council, which meets from time to time to discuss the mutual problems that may come up. The students, too, have occasional meetings at which time special points of view are presented. For instance, not long ago a panel was held for first-year section leaders on the question of freshman-sophomore rivalry, hazing, and associated matters.

In practice it works out that each first-year man has a Faculty adviser and a junior or senior adviser. The student thus has to use considerable ingenuity if he does not make the acquaintance of two people the very first week of the term who are desirous of being friendly with him and who can help him in the adjustments that he is called upon to make.

One of the basic assumptions behind the philosophy of student counseling which the writer has been describing is that we in the college might be of greater aid in the development of our students if we steadfastly maintain the attitude of being colleagues to our students in all matters—colleagues with greater experience in living, but all students together. All too often we are told that college authorities take the place of the parents, thus making one big family, so to speak. Acting on this assumption, we will perpetuate for the student many of the very same influences which bother him, cause him to feel that his dependence is being continued, and incite him to rebellion. The futility of thinking that college authorities can take the place of the parent is shown by the fact that most parents cannot themselves continue the traditional parental roles of authority without exciting a great deal of resistance in the form of hostility, rejection, or “acting out” of feelings in unacceptable behavior.

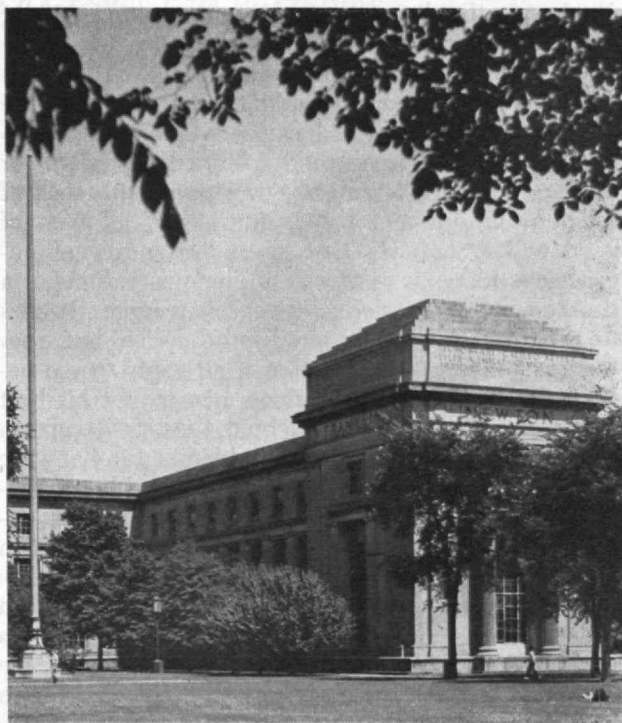
What we in the colleges need is a new idea of what our role toward students should be. Instead of trying to keep them out of trouble by protecting them, we need more emphasis on developing built-in controls. Rather than relying on the guiding influence of home, we should build upon those influences which are helpful and try to create an environment in college in which self-control is looked upon with the highest approval. The writer would even go so far as to recommend that some way be devised to include qualities of character, integrity, judgment, and self-discipline in the grading system and that the grading system itself have in it less emphasis on the purely intellectual accomplishment. Not that there should be any lowering of standards—far from it. Rather, the idea needs encouragement that knowledge is not enough; what is just as important is the meaning behind the knowledge.

The attitude and philosophy of the counselor himself is very important, in fact crucial, if such a program as described is to succeed in improving the educational process at college. Some teachers are not suited to be counselors, either because they do not enjoy such contacts with students, or because their own anxiety may be too greatly stimulated by contacts outside class. A few are not satisfactory

because they are too enthusiastic, usually in the direction of some special technique or approach, to the neglect of a more rounded view of college life. The great majority of college faculty members, however, are not only well qualified to perform counseling functions, but find that such experience enriches classroom contacts and is a source of enjoyment.

The good counselor is in effect a specialist in indirect education. He has contact with the student as he is in the process of making important decisions, and is therefore in a position to reflect with him upon the meaning of knowledge and the subtle but significant considerations that are weighed when choices must be made with “insufficient and constantly changing facts.” As Whitehead has said, in him the student sees “an ignorant man making use of his small store of information.” He looks at the academic scene through the student’s eyes and tries to understand it from his point of view without getting too identified with the student. He is a catalyst in self-understanding, both of the student and himself. He is a center of communication and knows who possesses or has access to special skills or knowledge that may be needed. He cultivates the judicial mind, thinks of other possibilities, shares perplexities and grows with his younger colleagues, listens well and conveys enthusiasm for learning and integrity.

He helps his student formulate his problem, rather than solving it for him, seldom gives direct advice and does not feel obligated to help every student, since there are no solutions to many problems. In such instances his sensitive and intuitive understanding may be of the greatest aid to the student in tolerating a difficult situation. He does not pass moral judgments but helps the student to do so for himself. Most important of all, he does not probe into the student’s private affairs but lets him divulge what he chooses in his own way and at his own rate. And he must always keep in mind that what the student comes to consult him about may not be what is really



worrying him, but that the student is trying him out, seeing what kind of a man he is, and trying to judge whether or not he will be able to handle confidential material comfortably.

In the field of problem solving there are a good many situations which come up that can be worked out for the most part by the Faculty member himself, possibly with the aid of some of his associates. These include cutting class, less serious instances of plagiarism, choice of course or career, courtship problems, lack of interest, feelings of insecurity, homesickness, and a host of other minor interferences with the accomplishment of good work. Then there is another class of difficulties in which the counselor may be able to be of help by playing a supporting role or he may need to consult with a professional, whether he be a chaplain, a clinical psychologist, social worker, or psychiatrist. These include anxiety states, bodily symptoms, mild mood swings, sleeplessness, panic in examinations, and instances in which the student has overreached himself by going out for more activities than he can accomplish successfully. Finally there are some very serious symptoms that practically always call for specialized help of one kind or another. These include bizarre behavior that "just doesn't make sense," overactivity with excitement and increased irritability, exhibitionism, suicidal threats or acts, homicidal threats, overt homosexual behavior, and the peculiar habits of that large group of emotionally unstable persons who are sometimes spoken of as psychopaths. Fortunately for the college counselor this type of individual usually gets weeded out earlier in his educational career, but a few of them do get into college.

The general goals of the counselor-teacher in education have much in common with those of psychiatry. In my opinion psychiatry confirms the dignity of the human being in any and all circumstances. It stands for his freedom to develop to the fullest extent of his ability. It works for the development of the individual so that he may have deep integrity, a feeling of responsibility, and will be in a position to exercise the best possible value judgments. It believes in tolerance, not of the condescending variety, but of the more innate kind which does not even assume an inferiority which one is then willing to overlook or forgive. Its work is entirely consistent with that of religious groups and the aspirations of all men of good will. It believes that an understanding of unconscious forces is necessary in many situations as a supplement to knowledge of conscious forces. It tries to take common sense into consideration but goes beyond common sense in that it attempts to see behind the motives which induce man to put his best foot forward and to see behind the self-deception that all persons practice without being entirely aware of it. Any adjustments that are encouraged by psychiatry are designed to free the individual from distracting conflicts rather than to cause him to function comfortably at a lower level. Psychiatry looks to the long-term welfare of the man or woman and is firm in its insistence on the patient's developing his own standards, as high as his background and experience will permit. The counselor thus, in co-operation with his colleagues, constructs a fundamentally sound col-

lege community structure in which mature thinking can frequently be observed and experienced, while his professional colleagues, the psychologists and psychiatrists, aid him in complicated situations outside his own area of competence, with constant teamwork being both desirable and necessary.

Because of the writer's clinical background the problem solving aspect of counseling is apparently over-emphasized in this article. It cannot be too strongly emphasized that this aspect of counseling is a secondary, albeit an important, one. The real purpose of a counseling program is to raise the standards of teaching and learning throughout the whole institution, and most particularly with the brilliant students. Furthermore, the writer is in complete agreement with the idea expressed in the Harvard report on advising, issued in November, 1950, that counseling should be associated with the intellectual activities for which the college exists.

It should be emphasized that the relationship between a counselor and student continues unchanged while the student is receiving help from someone with professional skills. The counselor is not an amateur therapist of any variety, hence does not need to feel threatened by anyone. He is the person in the student's life who plays the role of friend to the student during that awkward period when he has not had time to form his own "natural" connections.

The development of a counseling program, such as has been described, poses some very difficult problems especially in the larger schools. Our society is making increasing demands on everyone who assumes social responsibility as part of the duty of being a good citizen, and this is particularly true of the teacher. To be a good counselor takes time, and how is extra time to be found? To do no counseling also takes time for someone in many instances, and not time well spent. A basic concept in this philosophy is that any contact with a student is a counseling situation. Hence, by giving thought to the whole process of personal interaction that occurs, the quality of the relationship may be improved. Indeed, it is not too much to hope that after nearly all faculty members have served in a formal counseling program of this type, a formal system will become less necessary. Care must constantly be taken by those involved in educational planning not to get the individual teacher loaded with so many extra duties that he loses the feeling of freedom and independence so desirable for effective scholastic activity.

It is not too much to hope that careful attention to the needs of the individual by a counselor will, in the long run, change the general attitude on any campus from a somewhat rigid, intolerant, unthinking one to a most considerate, friendly, permissive one, which at the same time exerts steady unrelenting pressure on every student to develop high personal and collective standards of honesty, integrity, and accomplishment. Of many students — and an increasingly large number each year — we may hope it can be said, as it was of Sir Robert Shirley in 1683 that his "singular praise it is to have done the best things in the worst times and hoped them in the most calamitous."³

3. Sperry, Willard L., *Sermons Preached at Harvard*, page 187 (New York: Harper and Brothers).



Ewing Galloway

Engineers in Politics

*Government Will Approach More Closely the Ideals of This Republic's Founders
When More Engineers Take a Greater Part in Politics*

By THOMAS C. DESMOND

IT was my good fortune to study civil engineering at the Institute during the period when a great teacher and engineer, the late Professor George F. Swain, '77, was head of the Department of Civil Engineering. After being graduated from the Institute in 1909, I engaged actively in engineering and construction work in various parts of the United States for the next two decades. With considerable good luck in this feast or famine business, I was able to retire entirely from engineering work and related business activities, and in 1930 returned to live again in my native Orange County, New York.

In November, 1930, I was elected as a Republican member of the New York State Senate, and through successive re-elections I am now in my 25th consecutive year as a member of this Senate. A quarter-century experience as an engineer in politics has led me to three conclusions: (1) Both externally and internally, the United States of America faces more serious dangers than ever before in its history,

although these are still unrealized by many persons; (2) It is high time that engineers, who have contributed so much to our material advancement, should co-operate with other men of good will toward our political advancement; (3) The United States must not be permitted to fail in its noble mission of demonstrating, to a dictator-ridden, troubled world, the success of democratic institutions.

Long political experience as a member of the New York State Senate, as a delegate to two Republican National Conventions, and as a member of various Republican political clubs and committees, has afforded me opportunity to associate with many lawyers, but with few engineers. When applied to social and political problems, engineering principles of logical analysis can be most helpful. Of course, logic should be accompanied by sympathy when we deal with problems of human beings, and sometimes this need is difficult for engineers to master. Still, if more engineers had been in positions of political adminis-

tration, I believe they could have contributed highly constructive points of view toward many decisions.

At the 1954 session of the New York State Senate, for instance, the 56 members included 33 lawyers. Such a high percentage of lawyer members naturally led to lawyer-dominated decisions. On many matters of considerable importance, the judgment of those trained as engineers would have been helpful.

When he draws a deed or other legal instrument, a good lawyer quite properly looks backward to follow old — and sometimes almost archaic — forms. On the contrary, a good engineer must constantly be alert for new methods to solve unique problems. Intellectual habits, thus formed, often persist. An improvement in our political institutions might well result if a greater number of forward-looking engineers and fewer backward-looking lawyers were influential in politics.

I believe most earnestly in the essential goodness of human nature, in the ideals of our republican form of government, and in the high probability of ultimate response, by the uninformed, to leadership which is trusted to be enlightened, capable, and honest. But in politics there is, at present, a great lack of such leaders who are active on local, state, national, and international levels.

Engineers are certainly not the only kind of informed and altruistic men who can or should provide leadership in civil government. But to engineers in particular, in this modern age of technology, such acceptance of leadership now is a special obligation. And it will be a noble and enduring satisfaction to any engineer — as to any other man or woman — to realize that he is doing his share to maintain, with reasonable efficiency, our free institutions.

An analytical thinker, reading my laments that so few engineers and other objectively minded and able people are now influential in policy-forming political positions, might wonder how the country has been getting on so far and so well without them. Someone might say to me: "Yes, the ideal might be to have more engineers in politics; but, after all, engineers are mostly busy men, doing other useful work. Moreover, even granting that it is run by professional politicians, the country is nevertheless now the greatest and happiest country in the world and is doing rather well just as it is."

Ewing Galloway



To these plausible comments my earnest reply is (and how I wish I had the ability to emphasize what I have in mind more persuasively): "So far our country may have progressed well despite present poor politics. But this does not prove that our country will, nevertheless, continue to be both great and safe, if poor politics, leading up to poor statesmanship, continues in the future."

In previous generations the United States had to fear but relatively little, the results of bad politics and bad statesmanship. But those evil twins may lead us to catastrophe in this hydrogen bomb age. Always it would have been better if more of our ablest men had been engaged in government, rather than merely in business; now the need for their participation for the public welfare is imperative.

Let us contrast conditions as they are now with what they were, say, only 50 years ago. During this short span of time, engineers have contributed much to the development of automobiles, aviation, radio, labor-saving devices, and other technological improvements, all of which have made our country technologically so superior to what it was a half century ago.

But no one can honestly say that the quality of our government has made comparable improvement in the last 50 years. Our government has become increasingly complex; it has become much more important than it was 50 years ago, for now it affects even the daily lives and happiness of all of us.

My hope is that, in the years to come, many more capable minds will be devoted, in part at least, to the urgently needed improvements in our political and governmental institutions. The problem calls for the application of capable, well-trained minds, such as are possessed by graduates of M.I.T. and other engineering colleges. It calls for minds of the kind that have produced the great technological transformation of the past half century. Of course machines are important, but men are of very much greater consequence. Technological improvements are important, but progress in the art of human relations is even more significant. A world that knows television should not still know bayonets.

To all young engineers just starting on their engineering careers, I heartily commend part-time political activity; a duty of every citizen, but seldom now performed. To these young engineers, I would also state that political experience may also provide for them unusual educational advantages in developing their qualifications for business leadership.

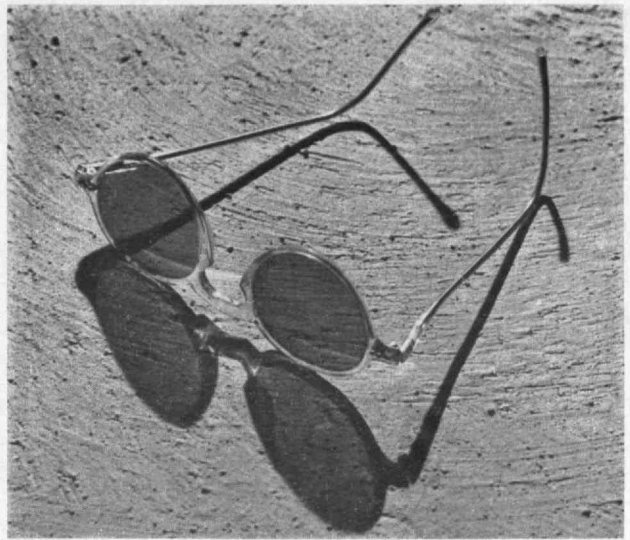
In technical schools, engineers learn to deal with factual data, that for the most part, are fixed. But political problems largely concern shifting data, and the obstacles are often human — not inanimate and predictable. The same distinctions of dealing with shifting, rather than fixed, data apply to the work of the president of a company as compared with that of a chief engineer.

Early political party experiences may be especially helpful to an ambitious young engineer who aspires to qualify, eventually, for a well-paid and important executive position. And in his later successful years, when he is expert in evaluating shifting, as well as

(Continued on page 202)

Through a Glass, Darkly

By FREDERIC W. NORDSIEK



H. Armstrong Roberts

For Better Vision in the Many Years Ahead

Apparel, Stylish, Can Be Bought for Ev'ry Head

IT isn't that more people are wearing eyeglasses nowadays; it's just that glasses have become more obtrusive. Thus a few decades ago the well-dressed executive wore pince-nez spectacles, having small rimless lenses supported by a bit of metal across the nose. But today's modish business or professional man looks through large lenses, set in heavy dark plastic frames. The distaff analogue of the masculine horn-rimmed spectacles are those eyeglasses of bizarre shapes and vivid colors, often bedizened with rhinestones or glittering metal embellishments, worn by the stylish woman of today. Indeed some women include in their wardrobe an assortment of eyeglasses, and daily select a pair to harmonize with their costume, as meticulously as they choose their jewelry for the day.

Thus eyeglasses, once considered a deterrent to human vanity, have now become an element of good grooming. Dorothy Parker's classic dictum "Men seldom make passes at girls who wear glasses" no longer holds true. Spectacles are indeed today regarded as contributory to feminine allure; high-fashion models are often provided with eyeglasses as part of their costume for advertising photographs.

The current glamour value of eyeglasses is also apparent in the theatrical field. Not long ago, actors would not appear before their audiences wearing eyeglasses, except in character roles. Theatrical folk who simply could not get along without optical aids resorted to contact lenses. But today numerous entertainers habitually affect eyeglasses of the most obvious sorts. Indeed this trend has given rise to a new form of theatrical art, frequently seen on television and in night clubs; this type of entertainment is called "literate humor" and is defined as "the old, sure-fire jokes told by a young man wearing eyeglasses."

How fortunate it is that human vanity no longer militates against eyeglasses; for few people get through life without them. Many persons are fortunate enough to be free from nearsightedness, far-

sightedness, astigmatia, and such visual difficulties in early life; but few pass middle age without developing *presbyopia*. This is the difficulty in visual accommodation, resulting from aging of the ocular apparatus, that characteristically manifests itself, around the age of 40, by development of difficulty in focusing on nearby objects.

Since the wearing of eyeglasses is well nigh universal, it is of interest to know what human visual frailties may be relieved by spectacles, and how these ocular difficulties are assessed for the purpose of fitting eyeglasses.

Human Vision

As the author has pointed out previously in the pages of this periodical, vision is undeniably the cardinal human sense.* Also set forth in the article cited is the concept that vision, like the other human senses, is a total subjective reaction to stimuli that may be objectively measured; in other words a psychological response to physical stimulation. Thus the physical characteristics of light — its wavelength and intensity — may be precisely measured by laboratory instruments. The image conveyed by light reflected from an object may be accurately registered on a photographic emulsion, by means of a camera. But when light conveys an image into the human eye, the sensation experienced by the recipient depends not only upon the physical characteristics of the entrant light, but also upon the curvature of the cornea or outer layer of the eyeball, the clarity of the crystalline lens of the eye, the state of health of the vitreous humor, retina, and other eye structures, the action of muscles in focusing the crystalline lens and in converging the two eyeballs if the object viewed is nearby, the action of nerves in transmitting to the

* Frederic W. Nordsiek, "All Experience Is of Change," *The Technology Review*, 53:22 (November, 1950).

brain the impulse generated at the retina, and finally the action of the brain in interpreting this impulse. Manifestly most of the phases of this sequence lie beyond the effectiveness of eyeglasses. Eyeglasses can indeed influence only the initial steps in this complex series of events that add up to constitute human vision. Spectacles, in the main, can do no more than offset optical shortcomings of the cornea and crystalline lens, and compensate for weaknesses of the muscles that focus the crystalline lens, or of other muscles that control the relative movements of the two eyeballs.

Defects of Vision

As all who have been exposed to high school science know, the human eye — considered purely as an optical instrument — may depart from optical perfection by being nearsighted (myopic), or by being farsighted (hyperopic). Parallel light rays entering the optically perfect eye, while the focusing mechanisms are entirely relaxed, come to focus upon the retina. (See Figure 1 for a diagram of anatomy of the eye.) In the nearsighted eye, light under such conditions focuses in front of the retina, with the result that a clear image is not seen. This difficulty is remedied by placing before the eye a diverging (concave) lens of suitable focal length. In the farsighted eye with focusing mechanisms completely relaxed, parallel rays do not come to focus anywhere within the eye structure; if projected, such rays would focus behind the retina. Eyeglasses to remedy farsightedness are converging (convex) lenses.

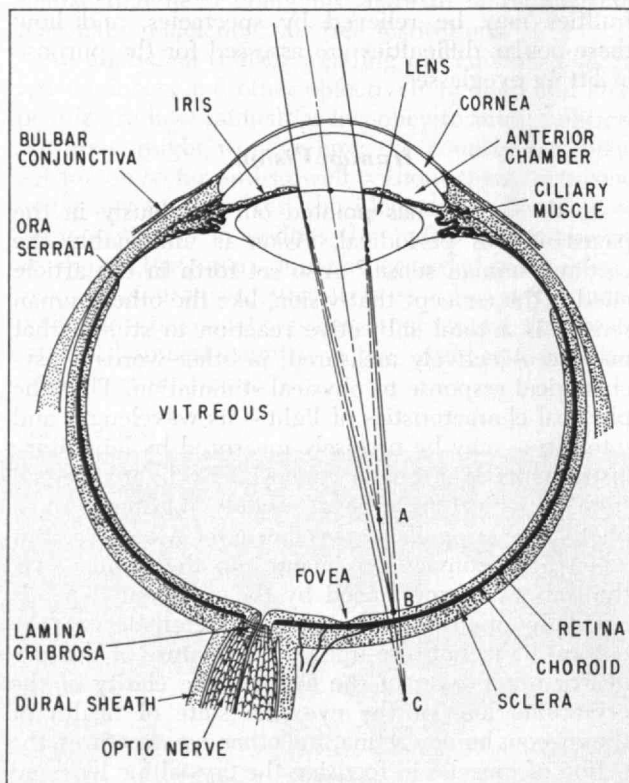


Fig. 1. Horizontal section of the anatomy of the human eye. In the optically perfect eye, entering parallel rays come to focus on the retina (B), whereas for nearsighted persons the point of focus is in front of the retina (A), and for farsighted persons, it is beyond the retina (C).

A third common optical defect of the human eye is astigmatia. This condition is an irregularity in the light-refracting system of the eye, in the form of a departure from spherical curvatures; in other words, unequal curvatures in different meridians. Astigmatia may readily be conceived by squeezing a tennis ball between the fingers and thumb until it is no longer spherical. A ball so compressed provides a good idea of the contours of an astigmatic cornea; for the seat of most astigmatia in the human eye is the cornea or transparent forward outer layer of the eyeball.

Astigmatia is rectified by the use of cylindrical lenses. These lenses are made with the same deviation from spherical curvature as the eye, and in use are positioned so that the axis of the lens distortion is perpendicular to the axis of the eye distortion.

Thus nearsightedness, farsightedness, and astigmatia may all be considered as optical defects of the refracting media of the eye, comprising the cornea and the crystalline lens behind the cornea. Two more human visual frailties will be discussed, that stem not from optical defects, but rather from shortcomings in muscles, or in resiliency of eye structures.

One of these troubles is presbyopia, already mentioned. Presbyopia results when, in middle age, the crystalline lens of the eye loses some resiliency, and the ciliary muscles that change the contours of the crystalline lens for focusing purposes lose some of their strength. The focusing mechanism provided by the crystalline lens and the ciliary muscle comes into play only when nearby objects are viewed; for as indicated previously, the normal human eye relaxed (that is, with the focusing mechanism not in use) focuses parallel rays, as from distant objects. Hence presbyopia initially manifests itself as progressively increasing difficulty in seeing nearby objects clearly, although the distance vision remains unchanged. It is rectified with convex lenses. Some ramifications of presbyopia will be explored a little later in this article.

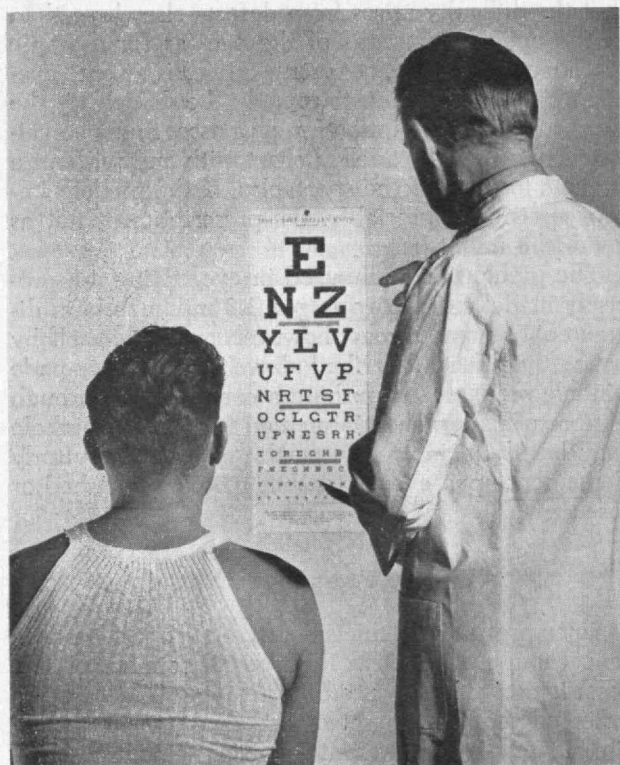
Last of the visual difficulties correctable by eyeglasses to be discussed here are the phorias. As man is blessed with binocular stereoscopic vision, he normally views objects with both eyes simultaneously. Therefore, when nearby objects are visualized, the eyes must rotate in their sockets toward the nose, causing the line of vision to converge. This converging movement of the eyeballs, called "adduction," is effected by the internal recti muscles. In some individuals, the eyes fail to converge sufficiently when nearby objects are viewed. This condition is called "exophoria." Exophoria may be offset by spectacle lenses in the form of wedges, with the bases of the wedges toward the nose. Sometimes the two eyes tend to converge too much; this trouble is called "esophoria." Esophoria is remedied by use of wedge lenses with the bases outward towards the sides of the face.

A third condition involving relative movements of the eyeballs is vertical phoria or "hyperphoria." Both eyes, obviously, must visualize on the same horizontal plane in order to provide a coherent image to the brain. In some individuals, one eye may tend to visualize on a plane diverging upward from that of the other eye. These divergent planes may be

brought together by the use of wedge-shaped lenses, with the base up in one eye, down in the other. It must be stressed that the use of wedge lenses in connection with the phorias merely counteracts the symptoms, does not remedy the underlying defects; medical measures to remedy these defects are available.

Eye Testing

The jargon of eye testing is sufficiently well known that many — perhaps most — people recognize “20/20” as meaning good vision. Equally familiar are the wall charts bearing lines of capital letters of graduated sizes, large at the top and small at the bottom, used to arrive at eye ratings of this sort (Fig. 2). This is the Snellen chart, named after the Netherlander who originated it around 1862. Each line on the Snellen chart is supposed to be legible, at a designated maximum distance, by a person enjoying



Keystone View Company

Fig. 2. Snellen chart, in use, for making objective tests of total visual experience of the patient.

“standard average” vision, with or without eyeglasses. Thus the single large letter at the top should be legible at a distance of 200 feet or less, the smallest line of type at the bottom at a distance of 15 feet or less. Note that the requirement is that the letters be legible, not necessarily clear and sharp.

The Snellen chart is designed so that the height of each line of letters is the tangent of five minutes of arc (in other words subtends five minutes of arc) at the distance at which that line should be legible. Thus, the letter supposed to be legible at 200 feet is three and a half inches tall. The letters rated for legibility at 20 feet are a little less than three-eighths of an inch tall.

The fraction representing the Snellen visual acuity rating consists of a numerator that is the distance in feet between the chart and the eyes, and a denominator that is the designation in feet of the smallest line of type legible at this distance. Since the test is usually conducted at a 20-foot distance, a Snellen rating of 20/20 thus means “standard average” vision. A Snellen rating of 20/40 means that with the chart 20 feet distant, the 20-foot line cannot be read but the 40-foot line can; in other words, the vision is somewhat poorer than “standard average.” Similarly a rating of 20/15 would indicate superior vision.

Manifestly the Snellen test is a subjective one; that is, it measures the psychological response to the total visual experience, as recounted by the patient. Furthermore the Snellen test, as usually conducted at a 20-foot distance, does not evaluate near vision, employed for ordinary reading. The Snellen procedure, however, has fundamental usefulness in eye testing. It provides an over-all rating of basic visual acuity. It gives clues to the presence of astigmatia, for with this condition certain letters may be confused in a line that otherwise can be read; thus *F* may be mistaken for *P*, or *C* for *O*. The Snellen rating even provides a presumptive forecast of the amount of correction that may be required in eyeglasses, by reference to a table that has been compiled on the basis of accumulated experience (see Table 1). This procedure does not,

TABLE 1*

Snellen rating gives presumptive forecast of strength, but not type, of spectacle lenses needed.

Snellen Rating	Expected Correction (Diopters)
20/200	2.25 – 2.50
20/120	2.00 – 2.25
20/100	1.75 – 2.00
20/ 80	1.50 – 1.75
20/ 66	1.25 – 1.50
20/ 50	1.00 – 1.25
20/ 40	0.75 – 1.00
20/ 30	0.50 – 0.75
20/ 25	0.25 – 0.50
20/ 20	0.00 – 0.25

* Adapted from — Harold R. Barnes, *Fundamentals of Practical Optometry* (New York: Modern Printing Company, 1948).

however, indicate whether the needed correction will be provided by convex, concave, or cylindrical lenses, or combinations thereof.

The Snellen chart is also useful to detect and measure phorias. If hyperphoria is present, the patient sees each line double. To test for the other phorias, a condition of hyperphoria is artificially created by placing wedge lenses in front of the eyes, with the base up in one eye but down in the other. This causes the patient to see each line of type double. If the duplicate lines of type visualized are in alignment, the patient is free of both exophoria and esophoria. If the line seen by the left eye extends to the left of the one seen by the right eye, exophoria is present.

The reverse relationship indicates that the patient is afflicted with esophoria.

Finally, the Snellen chart is a means for the fitting of spectacles by trial and error, using various lenses and various combinations in a trial frame. Such a trial and error procedure is usually a final step in any eyeglass fitting routine.

A variation of the Snellen test may be used to assess near vision. Near vision reflects not only the basic visual acuity as measured by the Snellen chart at a distance of 20 feet, but also, as already shown, the ability of muscles to focus the crystalline lens and to rotate the eyeballs. Test types for this variation of the Snellen procedure are provided on a card with print ranging from a small size less than a millimeter high, rated for legibility with "standard average vision" at four decimeters, to type several times as large rated for legibility at 11 decimeters. Since four decimeters is an average reading distance, a rating of 4/4 by this procedure commonly indicates good near vision.

Observations with the two different types of Snellen charts, considered together, give some presumptive evidence of the type of eye difficulty that may be present. Thus if an individual can read the four decimeter type with the card four decimeters or less distant from the eyes, but has a Snellen rating for distance vision less than 20/20, he is suspected of being myopic. If the four decimeter line can be read only at distances greater than four decimeters, or not at all, but the distance vision is 20/20 or better, presbyopia is suspected.

Objective Tests

The subjective tests just described manifestly are affected by any psychological quirks that influence the responses of the person being examined. Furthermore, since they involve the reading of test types, they are useless with those who cannot read, such as illiterates, imbeciles, or very young children. But fortunately there are objective procedures for measuring light refraction by the eye that require little co-operation from the patient other than sitting still. Although used alone for individuals who cannot read, the objective tests normally are used in conjunction with subjective tests when fitting eyeglasses to literate individuals. The principal instruments for objective determination of visual acuity of the eye are two in number; the retinoscope (also called skiascope) and the keratometer (also known as the ophthalmometer).

The retinoscope is a small instrument held in the hand of the examiner, through which he peers into the eye of the patient. Broadly speaking, the retinoscope measures the angle of emergence from the eye, of light reflected from the retina. The procedure for using this instrument — much too complex to be entered into here — indicates directly whether an eye is normal, nearsighted, or farsighted. By means of small trial lenses arranged in a rotating disc within the instrument so that the examiner may try various ones in front of the eye, the retinoscope also enables a direct estimate of the strength of lens needed to correct whatever hyperopia or myopia may be present.

The keratometer is used in somewhat the same way, but measures the curvatures of the forward surface of the cornea, by means of an image reflected from this surface. This instrument is useful for the detection and measurement of astigmatism, since the cornea is the chief site of this defect. The keratometer may also be used to measure the contours of the cornea for the purpose of fitting contact lenses.

It is of passing interest to note that the pinhole may be employed as a tool for eye testing. As the reader is doubtless aware, a pinhole will act as a lens; indeed may be used in lieu of the lens in a camera. A pinhole camera is always in focus, because a pinhole lens has unlimited depth of focus. Similar curious versatility applies to pinholes used in eye testing. For when placed in front of the eye, a pinhole will offset nearsightedness, farsightedness, astigmatism, or presbyopia. Hence its utility. If the Snellen procedure reveals substandard vision, the test may be repeated with a pinhole in front of the eye. If the pinhole does not improve the rating, it is probable that the difficulty arises from defects elsewhere than in the optical apparatus of the eye (as for example in the central nervous system). In this event, eyeglasses can do nothing to remedy the defect. By the same token a prescription for eyeglasses may be evaluated by using the Snellen chart with and without a pinhole in front of the spectacles. If the pinhole improves vision appreciably, the prescription is not as good as it might be.

The pinholes actually used in eye testing are precisely made, with sharp edges, 1.3 millimeters in diameter. The reader may, however, amuse himself by trying the effects described above with a homemade pinhole prepared by pushing a common pin through a piece of paper. Indeed such an improvised pinhole may be useful in an emergency to someone utterly dependent upon eyeglasses, but who has smashed or lost them.

Those Trombone Eyes

Since presbyopia affects nearly everyone who lives long enough, it merits a few special comments. The term is derived from *presbys*, meaning "old"; thus is reflected the usual onset of the condition in middle life. In our American way of using humor to cope with human frailties, presbyopia is the butt of many jokes, along with obesity, male baldness, and other hazards of middle age. Thus presbyopia is sometimes called "trombone eyes," because the focusing motions with reading matter held at extended arm's length look like the playing movements of a trombone performer.

One victim of presbyopia the writer knows, insists there is nothing wrong with his eyes; it is just that his arm is not long enough. As much solid fact as humor lies in this quip. Since reading matter is usually held with the elbow at right angles, an individual's normal reading distance is about the same as the distance from his shoulder to his elbow. Thus a person with short arms indeed has an abbreviated reading distance, and may become aware of presbyopia earlier in his life than an individual with arms of average or longer length.

A classic situation where one may first realize that presbyopia has descended upon him is the making of a telephone call from a pay station. First, the fine print of telephone directories combines with the dim illumination afforded by the small bulb in the standard telephone directory lamp, to make the looking up of the number difficult. (Dim light exaggerates presbyopia because the irises of the eyes open wide, thus diminishing depth of focus.) Having mightily strained his poor presbyopic eyes to look up the number, the victim now enters a dimly lit booth. The numbers on a telephone dial are quite large, but the narrow confines of the booth bring the dial so near to the eyes that the presbyopic individual is usually unable to see them without the aid of eyeglasses.

One index of the general prevalence of presbyopia among people past middle life may be noted at scientific meetings, or other conventions, where papers are read from a rostrum. Unless speakers in middle or later years are equipped with bifocals, they are apt to fall into one of two classes; the "putters on" of glasses, or else the "takers off." The "putters on" are the myopic individuals whose presbyopia makes it impossible for them to see their manuscript while wearing the concave lenses of their distance spectacles. They read without glasses, then put the glasses on when looking up, in order to see their audience.

The "takers off" are those with simple presbyopia, or possibly with hyperopia as well. They need to wear spectacles to read their manuscripts. But when they glance up at their audience they find that everything blurs; so off come the spectacles.

It is true, manifestly, that some people enjoy long lives without ever developing presbyopia. This frailty, like all characteristics of living things, shows a wide range of variation.† In general people with hyperopia develop presbyopia relatively early in life; myopic in-

†Frederic W. Nordsiek, "The Mathematics of Life," *The Technology Review*, 50:313 (April, 1948).

TABLE 2*

Although presbyopia only appears in middle age, it reflects a change continuous throughout life.

Age	Nearest Point Visualized Clearly (Centimeters)
10	7
15	8
20	10
25	12
30	14
35	18
40	22
45	28
50	40
55	60
60	100
65	133
70	400
75	infinity

* Adapted from — Harold R. Barnes, *Fundamentals of Practical Optometry* (New York: Modern Printing Company, 1948).

dividuals relatively later. Mild hyperopia may become apparent only when presbyopia begins to develop; then correction of the hyperopia may defer the need for eyeglasses to counteract the presbyopia.

As indicated, no absolutely fixed relationship between age and presbyopia exists. Nevertheless average values, based on observations of many people, have been set down in useful tables. Table 2, one of these, demonstrates an interesting fundamental fact about presbyopia. Continuously throughout life, the point that may be clearly visualized recedes further and further from the eyes. Ordinarily this change does not, however, become manifest until middle age because then the rate of change accelerates somewhat, and because then for the first time focusing difficulty is experienced at ordinary reading distances.

Another one of these tables of average values, Table 3, is useful to the eye examiner in making a presumptive guess at the strength of convex lens apt to be needed to overcome presbyopia, on the basis of

TABLE 3*

Presbyopia appears in middle life, and increases slowly with age.

Age	Average Convex Lens for Reading (Diopters)
40	0.25
45	0.75
50	1.25
55	1.62
60	2.00
65	2.12
70	2.37
75	2.50

* Adapted from — Harold R. Barnes, *Fundamentals of Practical Optometry* (New York: Modern Printing Company, 1948).

the patient's age. Using this value as a starting point, he can then determine the exact value by empirical tests, as will be described in a moment.

From Table 3 it is also reassuring to note that there is a limit, plus 2.5 diopters, to the correction for presbyopia needed on the average, even at advanced age. This reassurance may be helpful to middle-aged people who have been dismayed by the speed at which their presbyopia is progressing, and the consequent frequency with which they need to have their eyeglass prescription changed. Incidentally Table 1 shows that 2.5 diopters is also about the limit of total lens correction that is apt to be required, even with low visual acuity.

When a person with presbyopia is enabled to read with lenses no stronger than about one diopter, he usually can visualize distance objects clearly enough through these glasses. If any stronger convex lens than this is used, however, a state of artificial myopia is created. Hence when the individual looks up from his reading and glances across the room, everything blurs. He then joins the ranks of the "takers off," snatching off his spectacles whenever he glances up from his reading or desk work.

This difficulty is circumvented by exploiting the fact that when reading, one normally directs the glance downward. This makes possible the use of bifocal lenses. Such lenses have an upper section designed for distance vision, or even "plano" if no correction for distance vision is required. Bifocals have a lower segment, containing additional convex spherical correction. The wearer looks through these segments while reading or doing similar close work. A corresponding arrangement for people who need no correction for distance vision are the half spectacles or "Foxy Grandpa" glasses, having semicircular lenses covering only the lower part of the eye; the wearer peers over these to look at distant objects.

The more powerful convex lenses for presbyopia correction become, the less the depth of focus. Therefore, the wearer of bifocals may reach a point where he can see objects at reading distance through the segment, and distant objects through the top of the lens; but where he cannot see clearly at intermediate distances. This fact has led to the development of *trifocal* spectacles, having a segment divided into upper and lower sections. The lower section contains the full correction for reading distances, the upper section less, enabling the visualization of middle distances. The upper part of the lens, as always, is designed for distance vision.

Having arrived at an estimate of the type of lens (convex, concave, or cylindrical) and the strength (focal length) required, through a combination of the subjective and objective tests described, applied to each eye separately with the other eye occluded, the examiner then proceeds to make a final decision by trial and error. He uses a trial frame adjustable to the patient's features, to hold trial lenses. Such trial lenses come in sets with the full range of convex, concave, and cylindrical. Confronting the patient with a Snellen chart, the examiner (again testing one eye at a time) tries spherical lenses of various strengths around the value his previous observations have suggested. If astigmatism is present, the examiner not only tries cylindrical lenses of assorted focal lengths, but also rotates the axis of the cylinder into various positions. During these trials the effectiveness of the lenses is measured by the patient's ability to read the chart.

Thus the examiner arrives at an empirically proved lens to produce optimal vision for each eye. If the patient is in the age group subject to presbyopia, the examiner first decides upon lenses for distance vision, then determines how much additional concave lens is needed to enable clear vision at reading distances.

The examiner next sets down his conclusions in a prescription. The unit used is the diopter, defined as a focal length of one meter in air. Two diopters signifies a focal length of one-half meter. Convex lenses are denoted by the arithmetic plus sign; concave lenses by the minus sign. One-quarter of a diopter is the smallest increment ordinarily employed. Thus +0.25 designates a convex lens of one-quarter diopter, or having a focal length of four meters.

Cylindrical lenses are similarly designated in diopters, but also by the axis on which the cylinder lies. The range of this axis, arbitrarily, begins at 0 degree at the left of the face, signifying a horizontal axis. A vertical axis is designated 90 degrees. The limit of the

range is 180 degrees, which, like 0 degree, indicates a horizontal axis. No values larger than 180 degrees are needed because, for example, 270 degrees would again indicate a vertical axis and therefore be the same as 90 degrees.

Ordinarily 5 degrees or 10 degrees is the smallest increment used in prescribing axes of cylindrical lenses. By convention, cylindrical lenses are prescribed as convex or plus. This custom is practical because any minus cylindrical lens is equivalent to the same strength as a plus lens, with the axis rotated 90 degrees. Thus "cylinder 1.00 axis 30" means a one diopter cylindrical lens with the axis of the cylinder slanting from the upper left to the lower right, at an angle of 30 degrees from the horizontal.

Fig. 3 shows a typical prescription for eyeglasses. As in most prescriptions, Latin is employed. This practice, established in the healing arts centuries ago primarily to obfuscate the patient, is now continued perhaps mainly through custom. "O.D." means *oculus dexter*, or right eye. "O.S." means *oculus sinister*, or

	Sphere	Cylinder	Axis
O.D.	+1.00	0.75	60
O.S.	+0.75	—	—

Add +1.00 O.U. for near

Fig. 3. A typical prescription for eyeglasses. This individual, like many adults, suffers from hyperopia, astigmatism, and presbyopia.

left eye. "O.U." means *oculi uterque*, or both eyes. This particular prescription calls for 1.00 diopter convex spherical lens for the right eye, 0.75 diopter convex spherical lens for the left eye. Thus this individual has mild hyperopia, somewhat more in the right eye than in the left.

The prescription also calls for a cylindrical correction of 0.75 diopter, positioned at the 60-degree axis, in the right eye; this to offset astigmatism.

The bottom line of the prescription means that an additional one diopter of convex spherical lens, for both eyes, is needed to enable the patient to see clearly for reading; this takes care of presbyopia.

The patient now carries his prescription to that member of the eyeglass hierarchy known as the optician. The optician makes one final necessary measurement; the distance between the pupils of the two eyes. This measurement is taken with a ruler held in front of the patient's eyes. Two variations are noted; one with the eyes in the distance vision position or looking straight ahead, the other with the eyes in reading position — adducted or rotated inward.

The patient next selects eyeglass frames, according to his own ideas of style, and according to the optician's dicta concerning distance between the pupils, size and proportions of the face and head, breadth and contours of the bridge of the nose, and relative location of the ears where the temples of the eyeglasses rest. Also involved is a choice of lens shape.

(Concluded on page 214)

THE INSTITUTE GAZETTE

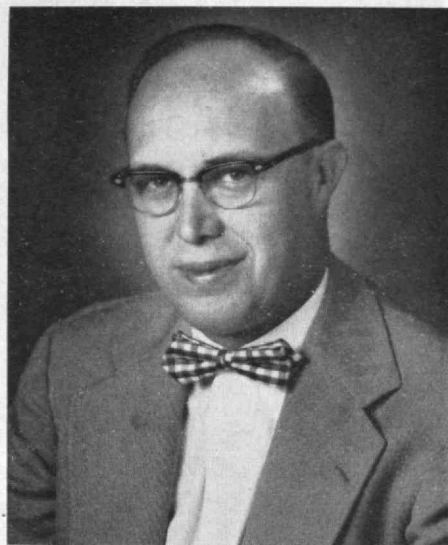
PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Webster Professorship

ROBERT A. RAMEY, JR., manager of the Magnetic Development Section of the Materials Engineering Department of the Westinghouse Electric Corporation (Pittsburgh), has been appointed Visiting Webster Professor of Electrical Engineering at the Institute for the second semester of the current academic year. The Webster Chair of Electrical Engineering at M.I.T. was established in 1952 under a grant of \$400,000 from the Edwin Sibley Webster Foundation in memory of the late Mr. Webster, one of the Institute's most distinguished Alumni. Dr. Ramey will participate in the development of teaching and research in the new area of solid state nonlinear devices and their applications to power modulators.

Prior to his appointment with Westinghouse in 1952, Dr. Ramey served as head of the Electromagnetic Components Section of the Naval Research Laboratory. While on this assignment he created a new theory of magnetic amplifiers and invented several new circuits.

At Westinghouse he has supervised and participated in research on machine tool, elevator and manufacturing process control; metering and telemetering; direct and alternating power conversion; and static devices for operation in the megacycle range.



M.I.T. Photo

Robert A. Ramey, Jr.
Visiting Webster Professor

Beneficent Uses of Science

THE third Midwest Regional Conference, the theme of which will be the "Beneficent Uses of Science," will be held on Saturday, February 26, 1955, at the Mid Day Club which is located in the Union Commerce Building, Cleveland, Ohio. The convocation will be an all-day event. It is scheduled to start at ten o'clock in the morning, and will be concluded with a dinner in the evening at which James R. Kilian, Jr., '26, President of the Institute, will speak.

As has been true with previous conferences in other cities, Alumni and friends of the Institute in the Cleveland area will be given opportunity to hear reports of progress on science from a group of leading scientists who will travel from M.I.T. in Cambridge to Cleveland, especially for this conference. One of the four Faculty members from the Institute who will participate actively on the program is Professor Gordon S. Brown, '31, Head of the Department of Electrical Engineering, who will speak on automation. From the same Department will come John G. Trump, '33, Professor of Electrical Engineering, who will discuss high energy particles and radiation in medicine and industry. The future uses of nuclear energy is the topic to be presented by Manson Benedict, '32, Professor of Nuclear Engineering. John E. Arnold, '40, Associate Professor of Mechanical Engineering, will speak on creative engineering. Richard S. Morse, '33, of the National Research Corporation in Cambridge, will discuss "This Business of Research."

Further information on the Cleveland Conference may be obtained by addressing inquiries to William C. Sessions, '26, whose address is: Bosworth, Sessions, Herrstrom, and Williams, 727 National City Bank Building, Cleveland 14, Ohio.

Hockey Game Opens Ice Arena

A HOCKEY game between undergraduates and Technology Alumni will be a feature event during the week end of February 19 and 20 when an artificial ice arena will be dedicated at the Institute. The new ice-skating area, west of Massachusetts Avenue, is adjacent to the Kresge Auditorium now nearing completion, and will use the refrigerating equipment of the auditorium for producing artificial ice. This new athletic facility will be reserved for a skating party for Alumni, their friends, and invited guests from 4:00 to 6:00 P.M. on Saturday, February 19.

Dedication exercises will be held at 2:45 P.M. on Sunday, February 20, at which time Robert M. Kimball, '33, Secretary of the Institute, will speak. The Alumni-M.I.T. Varsity game will follow these exercises. In the evening, a dinner for those interested in hockey (Technology Alumni, their wives, and guests) will be held at 7:00 P.M. at the Faculty Club.

Charles M. Curl: 1880-1954

CHARLES M. CURL, '07, Assistant Professor of Drawing and Descriptive Geometry, Emeritus, who served on the Institute Faculty for 25 years before retiring in 1945, died on October 8, 1954. He was 74 years old.

Professor Curl was born in Antrim, N.H., and received the degree of bachelor of science at M.I.T. He taught at the University of Maine before joining the Institute staff in 1920 as instructor in the Division of Drawing, which later became the Section of Graphics. Professor Curl retired in 1945 as assistant professor of drawing and descriptive geometry, emeritus, and as lecturer in the Section of Graphics.



M.I.T. Photo

The M.I.T. Nautical Association Sailing Team for the fall season and the trophies won by the Association during the past year.

Front row, left to right: Charles S. Robertson, Jr., '55 (Erwin H. Schell Trophy), J. Nicholas Newman, '56 (Sir Thomas Lipton Trophy), Commodore Alain J. de Berc, '55 (holding the National Intercollegiate Morss Bowl and the Brown University Trophy in front), John F. Wing, '55 (C. Sherman Hoyt Trophy), Paul D. Gordan, '55 (Danmark Trophy).

Back row, left to right: Silvester Pomponi, '57, George F. Barry, '56, Hamilton W. Stiles, Jr., '57, Ernest B. Blake, '55 (Harvard versus Technology Trophy), John E. Marsland, Jr., '57, George F. Baker, '56, Richard I. Mateles, '56 (Oberg Trophy), James L. Simmons, '55 (Nevins Trophy).

Not shown is the Potomac Frostbite Trophy won by the Nautical Association on December 4 and 5, 1954.

Senior Named Rhodes Scholar

WILBERT STRANG (the son of Mr. and Mrs. William D. Strang of St. Louis, Mo.), a top-ranking senior at M.I.T., was recently named a Rhodes scholar-elect for two years' advanced study at the University of Oxford, England. He is one of 32 winners in this year's American competition as announced by the American Secretary of the Rhodes Scholarships.

Enrolled in the Institute's Mathematics Department, Mr. Strang is completing in three years the usual four-year undergraduate course of studies. He was president and valedictorian of the Class of 1952 at The Principia, and at M.I.T. has been active as a member of the varsity tennis team and the Mathematics Society and as an officer in Theta Delta Chi Fraternity and the Christian Science Organization.

The selection of Rhodes Scholars is made in three stages. The candidate's first step is to gain the nomination of his college or university to stand as its representative in the competition. He then meets before a State Committee of Selection which has the option of sending two state nominees forward to a District Committee. The District Committee, in turn, is charged with the responsibility of choosing up to four Rhodes scholars from a group of nominees representing six states. The final selection is based on a preliminary examination of credentials, followed by the candidate's appearance before the Committee for informal personal interview.

The Rhodes Scholarship award was instituted in 1903 by the will of Cecil John Rhodes, whose hope was that international educational exchange would build increased international understanding and eventually foster world peace.

Catalytic Conclave

WHEN members of the Visiting Committee on the Department of Chemical Engineering* met at the Institute on May 7, 1954, for their annual review of matters relating to Course X, they found a long agenda to be acted upon. Deliberations occupied a full day and the Committee's report, comprising about a dozen mimeographed pages, is much too long to appear in full in the pages of The Review. The Committee's report was presented to the Corporation on June 11, to the Executive Committee on September 17, and was released for publication in The Review, in condensed form, on September 29.

Although many topics were discussed, for the most part the deliberations of the Visiting Committee were concerned with three major topics: (1) proper selection of students and members of the teaching staff for the Department of Chemical Engineering; (2) the role of Nuclear Engineering in the Department's activities; and (3) current problems relating to the Department's summer study programs in its Practice Schools.

Fortunately there is little difficulty in attracting outstanding men from the Graduate School for careers in teaching. The Department feels that it has, therefore, a continuing and good source of future staff members, although experience shows that it is difficult to get outstanding men to return to teaching positions after they have been in industry for several years.

(Continued on page 200)

* Members of this Committee for 1953-1954 were: Charles A. Thomas, '24, chairman, Bradley Dewey, '09, William M. Stratford, '21, William S. Brackett, '23, James H. Doolittle, '24, Robert B. Semple, '32, J. Peter Grace, Jr., and Anthony Nerad.

BUSINESS IN MOTION

To our Colleagues in American Business ...

This is called a rack. It is fastened to electric light poles to hold wires from pole to pole, and from pole to house. Perhaps you may have noticed racks on poles, but unless your electric company has recently replaced them on the lines in your vicinity you have not seen anything quite like this. It is made of aluminum, instead of galvanized steel, and is assembled almost entirely of extruded shapes.

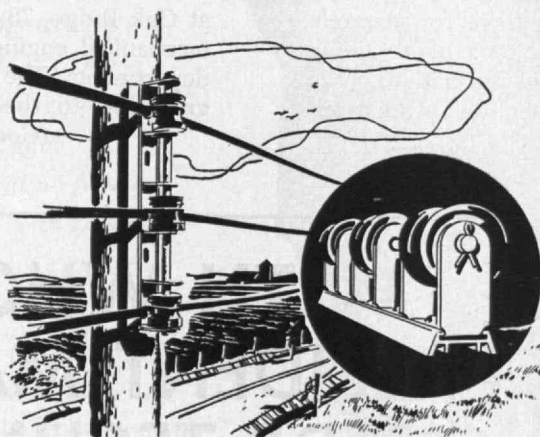
Naturally you will think that aluminum was chosen in order to save weight, and as a matter of fact, lightness plus strength is a factor. The aluminum rack is five to six pounds lighter, and that is appreciated by the linemen who have to put the rack on the pole after they have climbed it. However, lightness is not the main consideration. Long life is the big advantage. Modern methods of treating poles with preservatives make it reasonable to assume that a pole will last for 50 to 60 years. Now for the first time there is a rack or bracket, as it is sometimes called, that should outlast the pole. As soon as aluminum is exposed to the air, a thin film of oxide forms, and this is a protection against further action by air and rain. As for price, the aluminum rack costs a little more, but this is compensated, many times over, by the increased years of service.

There are some interesting features of design that are worth noting. The extruded shape that forms the

base of the rack is adequately ribbed for strength, and in addition, provides a channel into which the arms are slid after having been notched and bent at right angles. The channel and the arms together take the pull of the wires; the rivets are used just for positioning. Incidentally, the rack has to withstand a total pull of 6,000 pounds. The arms are formed with a slight longitudinal camber or bow and have rounded edges, because linemen pull the wires across them,

and the camber and edges protect the insulation from damage. The rod on which the insulators are threaded is extruded aluminum. One final detail, which is not easy to see in the drawing; the bottoms of the base are toothed, to hold to the pole better.

Revere takes especial satisfaction in this new and superior rack, because the Technical Advisory Service, the Mill, and the customer worked so closely together. There was a joint attack on the problem of developing a product that would not only be better, but could be assembled simply and economically. Suppliers to industry are not only well informed regarding their materials, but glad to cooperate with customers and prospects on matters concerning specification and fabrication. Revere suggests that you call upon your suppliers not only to fill orders, but to place their skill and knowledge at the disposal of your designers and production people.



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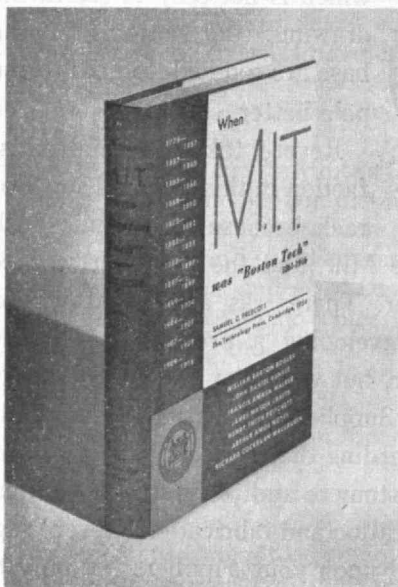
(Continued from page 198)

Professor Edwin R. Gilliland, '33, pointed out the importance of securing students of proper qualifications in the Department. The Department has practically nothing to do with selection of undergraduates, but the selection of graduate students is entirely the responsibility of the Department. The cost of graduate study, and the financial support which graduate students are able to obtain while pursuing advanced degrees, have a bearing on the applications which the Department receives for advanced study. Although the Department of Chemical Engineering is able to provide fellowships on a basis favorable with that offered by other departments at the Institute, it faces competition from other colleges for first-rate graduate students. The Department would be in a more favorable competitive position with increased fellowship funds; these are the result of offers from industry rather than solicitation by the Department, since students who accept such fellowships are under no obligations to join the firm which provides the fellowship. One of the Institute's major responsibilities is to uncover new fields for research. Opposition was expressed at the idea of obtaining government money in support of specific research problems merely because such funds might be available.

In discussing the Institute's course in nuclear engineering, Professor Manson Benedict, '32, emphasized the aim of providing broad education in general disciplines (such as physics, mechanical engineering, or chemical engineering) for students who wished to follow the more specialized nuclear field. The curriculum for students enrolled in nuclear engineering is intentionally made broad, because men trained in diverse disciplines must work together in the new field. The Institute's courses deal with unclassified topics, but those students who can be cleared are encouraged to participate in summer projects at the Oak Ridge Practice School, where classified research is undertaken.

The third major point of discussion was related to the Chemical Engineering Practice School and the Oak Ridge Practice School. For many years the Chemical Engineering Practice School has provided ideal training and plant experience for students prior to their industrial work; the School is especially useful for students taking employment with companies not large enough to do their own professional training. The Oak Ridge Practice School was organized in 1948 with the expectation that students from other departments at the Institute would make extensive use of its facilities. Of 94 graduates who took training at Oak Ridge, 73 were chemical engineers, 17 were mechanical engineers, and only 4 came from other departments. The diversion of chemical engineering graduates to the Oak Ridge Practice School has

(Concluded on page 202)



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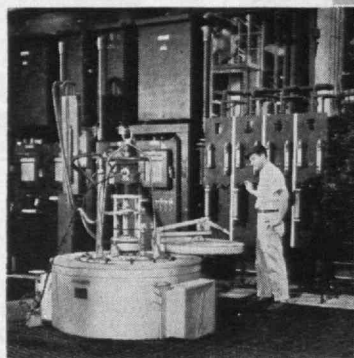
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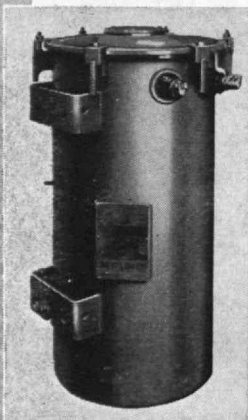
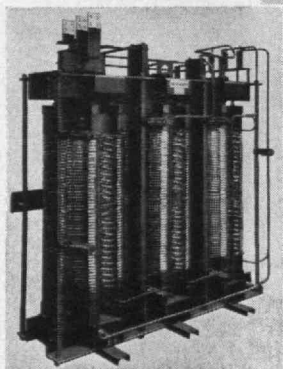


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(Concluded from page 200)

caused a significant reduction in enrollment of the Chemical Engineering Practice School. The imminence of military service, the need for some students to begin their professional earnings, and the industrial practice of recruiting students for summer work with good pay further restrict potential recruits for the Chemical Engineering Practice School. It appears that the Department of Chemical Engineering does not train sufficient students to utilize fully the facilities of both Practice Schools. It was the feeling of the Visiting Committee, however, that the Practice School fills an excellent and desirable function, and that it should be strongly supported.

Under the Institute's integrated Humanities program, students are allowed greater freedom in selecting electives. It is felt desirable for the Department to offer two professional electives for seniors: (1) kinetics and catalysis; and (2) a course synthesizing a number of undergraduate courses. The second course has already been offered and has been well received.

ENGINEERS IN POLITICS

(Continued from page 190)

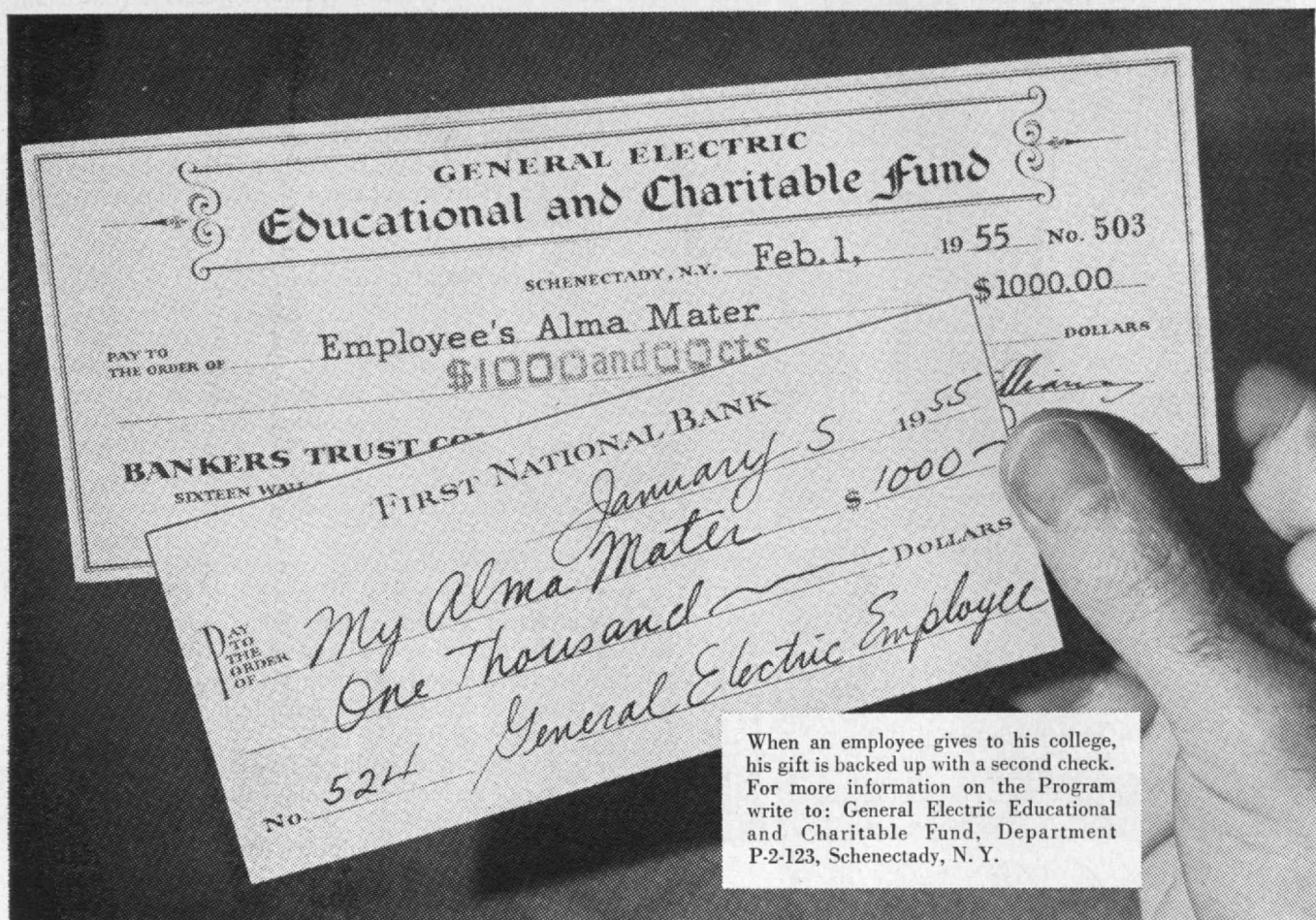
fixed, data, I trust that he may continue to be an important force for political betterment in his community.

It will be observed that, if our hopes were to be realized, nearly every engineer would be expected to give some time to active political work, mostly with limited responsibilities which would not greatly interfere with his professional work. The holding of the more important political positions (such as that of mayor of a city, or membership in the United States Congress, or in a state legislature) present greater difficulties and might easily consume so much time as to interfere seriously with an engineer's professional duties. These policy-forming political positions are so important, however, and the percentage of engineers in them at present is so close to zero, that every possible effort should be made to encourage engineers to seek to fill them.

Large engineering firms might well assist, as legal firms often now do, in making it easier for some of their younger members to hold time-consuming public office. An older engineer who has been successful enough financially to provide reasonably for his family needs might well retire from active engineering work to devote the rest of his life to public service. Although not very frequently followed, a notable example of the latter procedure is that of former President Herbert Hoover. Another great engineer who followed this example and retired entirely from his former important Canadian engineering work, to devote his outstanding talents to public service for the

(Continued on page 204)

A new way of giving colleges the financial help they need



The G-E Educational Fund announces a plan to match an employee's gifts to his college, up to \$1000 in one year.

One out of every two colleges and universities in the U.S. is today operating in the red, and rapidly increasing enrollments mean they face a mounting deficit every year.

To American industry, which depends on healthy schools for its trained man power, the question is, "How can we help—and encourage others to help?"

A "Corporate Alumnus Program" is now announced for 1955 by the Trustees of the General Electric Educational and Charitable Fund. Here is how the plan works:

For every gift made by a G-E employee to an accredited four-year U.S. college or university at

which he has earned a degree, the Fund will make a gift to the same school. Within the limits of the plan, it is the intent to match each employee's contributions, up to \$1000 in one year, on a dollar-for-dollar basis. This is in addition to the scholarships, fellowships and grants-in-aid provided by the Fund.

The Corporate Alumnus Program will not itself lift the colleges' dollar burden, but it will be a good start in stimulating increased alumni and industry support—and, as we see it, a good example of progress in the American way.

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ENGINEERS IN POLITICS

(Continued from page 202)

past 19 years, is Clarence D. Howe, '07, now Canadian Minister of Trade and Commerce, and Minister of Defence Production.

Now a fellow member of the M.I.T. Corporation, Mr. Howe was also a graduate of the Institute's Course in Civil Engineering when it was headed by that inspiring teacher, the late Professor Swain. Then, as now, the M.I.T. teaching staff included many men of unsurpassed technical abilities who were also devoted to the public service. Professor Swain might well be proud of his pupil, Minister Howe, who has had such a large share in improving the economy of Canada in recent years. This has resulted in the present high valuation of the Canadian dollar among the world's currencies—even higher than the United States dollar.

By their characteristic objective and clear thinking, engineers, in important political positions, could contribute much that is necessary and greatly to be desired for the public good. The fact that most such engineers would be serving at a personal sacrifice, with no selfish interest of financial gain in being re-elected, could be helpful. They would be likely to vote as their better judgment dictated, and not against their own better judgment in order to curry favor and be re-elected.

The technical training of an engineer naturally develops in him habits of exact thought. The correct analysis of various factors which may cause errors and the objective attaining of the truth are essential procedures in solving engineering problems. When an engineer is designing the steel frame for a skyscraper, a length of 20 feet, 6¼ inches for a steel beam means exactly that and nothing less or nothing more. A quarter-of-an-inch error may cause the beam not to fit.

When a lawyer is arguing a case before a jury, however, sometimes success for his client and himself comes from the lawyer's skill in making the worse appear the better. A lawyer must seek to find out the facts of his case, it is true, but in the trial he devotes his efforts to presenting only such an interpretation of the facts as may seem favorable to his client.

I understand fully the adequate reasons for such conduct by lawyers when acting as paid advocates for clients. My objections to the present high percentages

(Continued on page 206)

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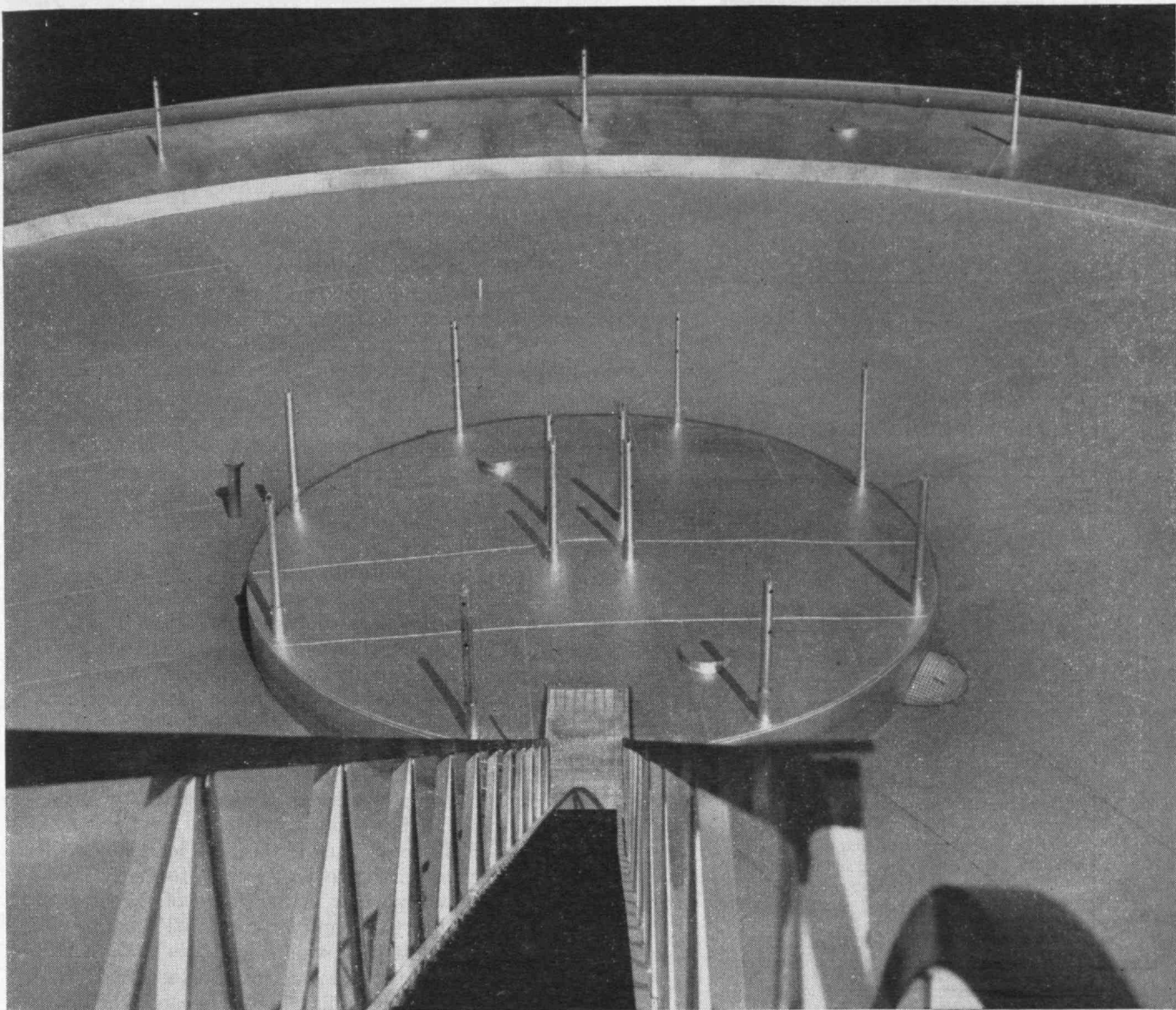
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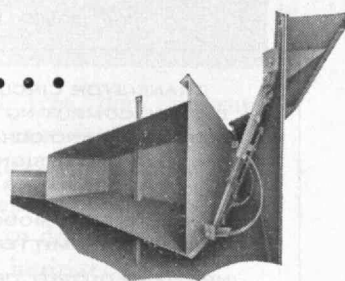


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ENGINEERS IN POLITICS

(Continued from page 204)

of lawyers in our state legislatures and the United States Congress stem largely from the fact that so many lawyer-legislators use the same habits of thought and the same standards in carrying out their legislative duties.

To function properly, representative government requires that, after proper study, men in policy-forming political positions should vote in accord with their honest convictions, and not otherwise as they may be requested by outside, nongovernmental interests, which are too often selfish and opposed to the public good. Throughout our whole country, representative government now suffers greatly from the too frequent and too prominent inclusion — even to the attainment of legislative leadership — of the type of politically subservient lawyer I have described. It will be improved when more engineers, and other men and women, who are not dependent on politics for a livelihood, are willing to seek and serve in policy-forming political positions.

Politics, another name for government, will approach more closely the noble ideals of George Washington, Alexander Hamilton, Thomas Jefferson, and the other great founders of our republic, when more engineers and other constructive-minded Americans are willing to take an active part in politics, not for what they selfishly receive, but for what they can unselfishly give. Let us not forget that, in his youth, George Washington served as an engineer and surveyor in colonial times.

One of the best known business leaders of the United States, Clarence B. Randall (formerly President and now chairman of the Board of Directors of the Inland Steel Company), in the M.I.T. commencement address last June, well said:

"The first duty of the American businessman is not to his company but to his country, because there will be no American system of business as we have known it unless our country continues strong and vital, and measures up to its awesome responsibility in the world. . . . Your job at the beginning is at the community level. That means helping with the schools to which your children will go, it means the church, it means all of the community services, it means entering into political life in the best sense, joining a political party, knowing what political creed you espouse and furthering it in the great American faith.

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Then going on into the more mature positions of leadership. . . ."

It is our local politicians who usually nominate candidates for the United States Congress, and, as delegates to national conventions, even our candidates for President. Bad politics at a local or state level inevitably leads up to bad politics at the national level. Bad politics at the national level leads to decisions — often of world-wide importance — which are made not in accordance with great principles of truth and justice, but to win domestic elections. Ultimately, the welfare of the United States may be easily jeopardized by winning national elections on a series of dazzling but false issues.

Better politics and better statesmanship, with both brought into accordance with high engineering standards of truth, intelligence, and reason, could produce a better world. Our present international difficulties do not seem to me to have resulted inevitably. The world of 1955 that knows television and many other magnificent engineering achievements should not be a world armed as never before for mass destruction. To seek to determine, and then to eliminate, causes of evils represents a noble challenge to men of good will in all professions, and certainly to engineers.

Conclusion

My appeal is for a greater number of men and women of intelligence and high character to be active in politics. Certainly intelligence and high character are not confined exclusively to engineers, nor do engineers hold a monopoly on virtue. But the education and daily work of engineers are concerned with seeking the exact truth and then working hard to have that exact truth prevail in spite of obstacles. The solution of our many social and political problems today requires men who are willing and able to do just that — determine the truth and then work mightily against all obstacles to have that truth prevail. Men and women of many groups may share alike in the desire to make the world better, but no group can be more effective toward the attainment of that ideal than well-trained engineers. Engineers have helped mightily in raising our standards of living. Their help is needed now to raise our standards of politics.

° Clarence B. Randall, "The Educated Man," *The Technology Review*, 56:461 (July, 1954).



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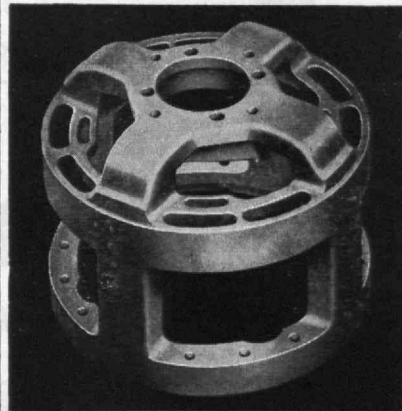
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CHALLENGE FACING THE UNITED STATES

(Continued from page 185)

Finally Stalin's successors confront the Russian peoples themselves, anxious for peace, anxious for material advance, anxious to have the burden of chronic fear lifted from them. These popular ambitions the Kremlin recognizes, but cannot satisfy without changes in domestic rule and foreign policy it is still unprepared to make.

Stalin's successors have clearly been aware of the cost and the dilemmas Stalin's heritage has imposed upon them. And the symptoms of this awareness have impressed many European observers of the Soviet scene, notably Sir Winston Churchill, who spoke of them on his trip to Washington in the summer of 1954.

It is certainly heartening to observe that history has not stopped in Russia; and to be able to demonstrate with precision that monolithic totalitarianism creates grave long-run problems and dilemmas by the very techniques which impart a surface of implacable strength in the short run. Our national policy should seek to exploit and to consolidate any substantive possibilities for easing tensions which may result from internal changes in the Soviet Union.

There would be grave danger, however, in assuming that these recent symptoms of change in the Soviet Union automatically will yield a solution to world-wide tensions. There are no signs whatsoever that the changes wrought by Stalin's successors are as yet more than superficial.

They have not in fact decreased the allocation of resources to military purposes and heavy industry. They have not in fact altered the police techniques of control over the Russian peoples. They maintain an imprisoned agriculture, embracing 50 per cent of the population. The modifications in the forced labor system have thus far been minor. The realities of Moscow's total control by armed force over the satellites remain beneath the surface of new policy gestures.

Moscow and Peking talk much of increased East-West trade; but there is not the slightest evidence that they are prepared to restructure their economies in order to expand such trade significantly, and without such drastic reorganization they simply do not have the capacity to trade on a substantially increased scale with the rest of the world.

Communist China is a somewhat different case; although the same broad conclusions hold. The men who now rule the China mainland are confident, ruthless, ambitious for indefinite expansion of power and prestige in Asia. They are in a mood nearer to Stalin of the 1930's than to the uneasy middle-aged bureaucrats who now rule in Moscow.

The system of centralized power that Peking has clamped on the Chinese people guarantees intimate control in the short run. But the Chinese Communists confront two great problems. First, it is doubtful that the Soviet technique of industrialization after 1929, based as it was on a rich surplus agriculture and an industrial heritage left from

(Continued on page 210)



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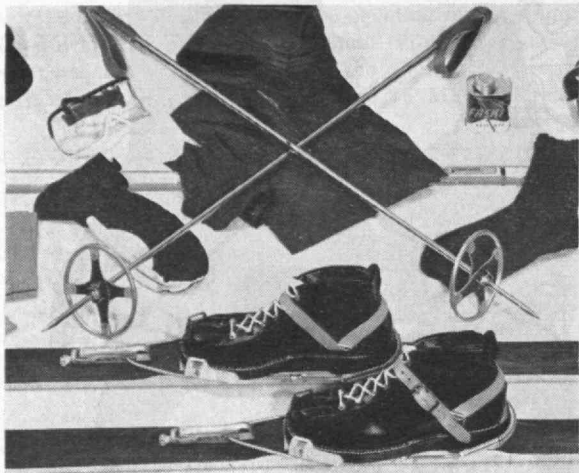


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CHALLENGE FACING THE UNITED STATES

(Continued from page 208)

czarist times, can produce the results the Chinese Communists seek on the Asian scene. Communist techniques in Russia caused a 20 per cent fall in agricultural output in the First Soviet Five-Year Plan. This resulted in millions of deaths; but Russia's natural food surplus mitigated the crisis. Such an outcome in China would constitute a human disaster which would shake the control system erected by Peking and damage, if not destroy, the image of leadership the Chinese Communists seek to project out on Asia.

Whether or not a disaster of this magnitude comes about in China in the next decade it is clear that the regime has succeeded in alienating the 80 per cent or so of the Chinese people who are peasants; and it has damaged the incentive to produce from the soil on which all else depends in China.

Second, the Chinese Communists are caught up inextricably in the fate of Asia. They are not isolated, like the Soviet Union after 1919. They must either make good their pretensions as the ideological model for Asia, and its major power, or they must fail.

Here is the Free World's challenge and opportunity in Asia. There is no reason why a united Free World cannot produce more substantial material and human progress in Free Asia over the coming years than the Communists can in China. Such an outcome could be expected to have profound indirect consequences on the China mainland, on Sino-Soviet relations, and on the world-wide status of Communism as an ideology.

Conclusion

In short, any responsible analysis of the situation within the Communist bloc leads to this conclusion: a vigorous and united Free World has the material and spiritual resources to frustrate Communism's menace and outstrip its pretensions as a system for solving the problems of organized society in this century.

These reflections, then, are basically optimistic. The areas for action are open to us on this side of the Iron and Bamboo Curtains. We have the
(Concluded on page 212)

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CHALLENGE FACING THE UNITED STATES

(Concluded from page 210)

resources, the talents, and the heritage of ideas and idealism necessary for the task. The challenge facing the United States can be met with success.

The proposed lines of action carry, of course, a price tag—a substantial price tag: some several billions of dollars more each year spent and invested in the Free World and at home than we now budget for. Extra material resources alone emphatically cannot do the job; but they are probably necessary. Can we afford such substantial additional outlays? Of course we can. Our economy normally increases its capacity to produce by about 14 billion dollars each year. At the moment, we have an unused margin of capacity of about 30 billion dollars. If this regular margin, plus this backlog, is not enough—and it is almost certainly sufficient to meet the foreseeable challenge—we have larger margins of surplus consumption to fall back on than any society in the world. If we fail to meet the challenge, it will not be because we lacked the resources both to do the job and to maintain our high standard of welfare.

Do we have the will to do this job? Here each man must speak from his own sense of the nation and from private faith. I should merely say that there is nothing in our history out of the long or recent past to suggest that, when the facts are laid before the American people and vigorous leadership offered, we will fail to respond. I profoundly believe once the trend of events is made clear, that it is not in the American temperament to accept the slow, only momentarily comfortable defeat the enemy plans for us. Our country was born as a symbol to the world of national independence and freedom ordered by individual consent. We are not yet ready to retire from a field where independence and freedom are the issues of combat.

Victory will not come without sustained effort. It will not arise from complacency, peevishness, or brooding over past errors. It will not come cheaply. It will not be hastened by attempts at short cuts or by partisan slogans. It requires a united America maintaining a solid creative effort—military, political, and economic—for decades if necessary.



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THROUGH A GLASS, DARKLY

(Concluded from page 196)

The optician is now ready to make up the glasses. From an optical concern he obtains the requisite "blanks" — large lenses with finished ground and polished surfaces, but with rough edges. Such blanks come in the full range of convex and concave lenses, with or without any cylindrical correction, all in the customary 0.25 diopter increments. The axis of the cylinder in the blanks is of no import, as it is set when the margins of the lens are cut.

Now the optician needs merely to cut the periphery of the blanks so that they fit the frame selected, and so that the centers of the lenses, and the axes of the cylinders, if any, are properly positioned. This cutting is done on a simple compact automatic machine. The optician fastens the blank in this machine, positioning the center of the lens according to his measurement of interpupillary distance, and positioning the axis of the cylinder, if present, according to the prescription. Into the guide mechanism of the machine he inserts a template of the size and shape of lens required for the frame. He turns the machine on, and soon the lens is finished.

Grinding of the surface of spectacle lenses is ordinarily done locally only when a cylindrical correction is needed in bifocals or trifocals. Such lenses are available as ready-made blanks with all combinations of spherical correction. But since the location of the segment in these lenses determines their position, they cannot be rotated to position spherical correction. Therefore cylinders ordinarily are added by surface grinding in a local optical shop.

Finally the optician needs only insert the lenses into the frame and effect a few minor adjustments of the frame to fit exactly the features of the wearer.

Thus the perfection of modern medical, optometric, optical, and mechanical skills have made the fitting of eyeglasses a precise and effective procedure. But although eyeglasses serve to offset ordinary visual weaknesses, there are many other eye changes — infections, structural degeneration, benign or malignant tumors, opacity of the crystalline lens or cataract, trauma — that require the skilled attention of a medical man. This article has sought to provide an understanding of the technicalities of eyeglasses, that may help the reader co-operate with the professional man who supervises the care of his eyes. Such co-operation is essential to conserve vision, most precious of the human faculties.

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Bion A. Bowman, '09

Carroll A. Farwell, '06

Ralph W. Horne, '10

William L. Hyland, '22

Frank L. Lincoln, U. of Me., '25

Howard J. Williams, '20

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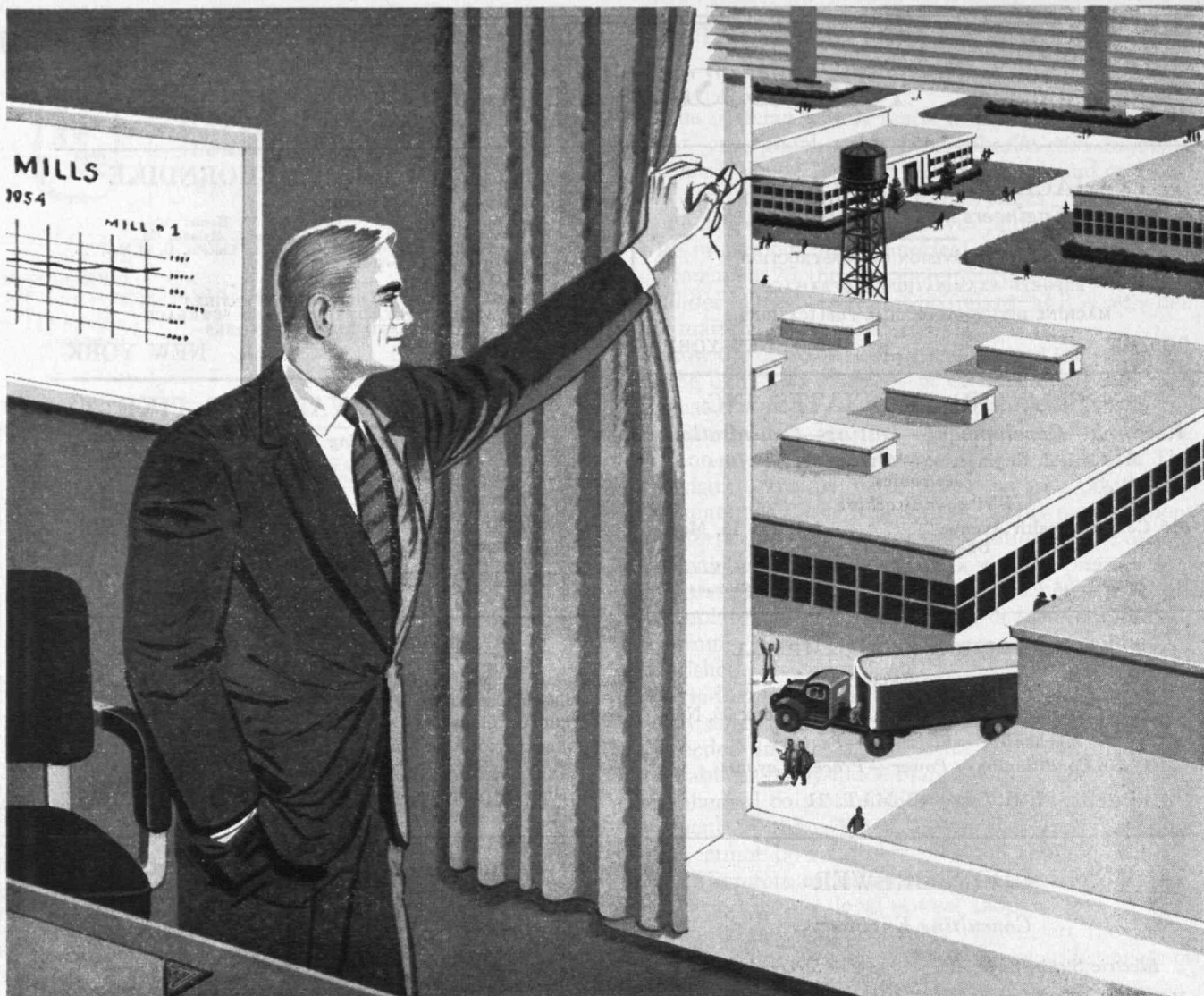
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DILLSBURG, PENNSYLVANIA

Dallas, Texas

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Robert E. Smith '41, Vice President



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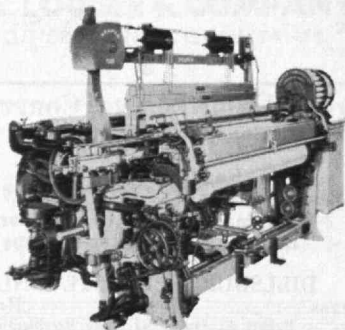
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Alumni AND Officers IN THE News

Final Returns

ALFRED P. SLOAN, JR., '95, Chairman of the Board of General Motors, was recently selected as the 1954 recipient of the Hoover Medal, one of the highest awards in the engineering profession. The medal, given "for distinguished public service," was presented to Mr. Sloan at the annual dinner of the American Institute of Consulting Engineers.

ROGER WILLIAMS '14, Vice-president and member of the Board of Directors and member of the Executive Committee of the Du Pont Company, has been chosen to receive the highest award in American Industrial Chemistry, the Perkin Medal of the American Section of the Society of Chemical Industry for 1955. The 1955 award will be the 49th impression of the Perkin Medal, bestowed for outstanding achievement in applied chemistry.

VANNEVAR BUSH '16, retiring President of the Carnegie Institution of Washington, received the annual \$1,000 William Procter Prize awarded by the Scientific Research Society of America. The award, given for general scientific achievement, was presented on December 30 at the 121st A.A.A.S. meeting in Berkeley, Calif.

WILLIAM A. ZISMAN '27 of Silver Spring, Md., has been awarded the Navy's highest civilian award for his "outstanding research in the field of lubrication," including the crash development during the Korean conflict of a complete lubrication system for aircraft machine guns. Dr. Zisman received the Distinguished Civilian Service Award from Assistant Secretary of the Navy James H. Smith at a ceremony attended by his fellow scientists at the Naval Research Laboratory and by many Naval officers, including the Chief of Naval Research, Admiral F. R. Furth.

EDWIN R. GILLILAND '33, M.I.T. Professor of Chemical Engineering, was awarded

the 1954 William H. Walker Award by the American Institute of Chemical Engineers. The citation was made in "recognition of his outstanding record in the publication of original research, especially in the fields of distillation, thermodynamics, mass transfer and chemical reactor technology." This award is named in honor of Dr. William H. Walker who was in charge of Chemical Engineering at M.I.T. from 1911 to 1920.

ROBERT B. WOODWARD '36, Morris Loeb Professor of Chemistry at Harvard, was chosen to receive the Leo Hendrik Baekeland Award of the American Chemical Society's North Jersey Section for 1955. The Baekeland Award consists of \$1,000 and a gold medal and was presented to Dr. Woodward at a dinner climaxing an all-day section conference in the Essex House, Newark, on January 24.

Conferred biennially upon an American chemist under 40 in recognition of accomplishments in pure or industrial chemistry, the award is sponsored by the Bakelite Company (a Division of Union Carbide and Carbon Corporation, New York).

JOSEPH F. LIBSCH '40, Professor of Metallurgy at Lehigh University, has received the \$2,000 award from the American Society for Metals for outstanding contributions to the teaching of metallurgy.

CYRIL M. HARRIS '45, Director of the Acoustics Laboratory at Columbia University and LEO L. BERANEK, Associate Professor of Electrical Engineering at the Institute, were each awarded a fellowship for outstanding work in audio engineering by the Audio Engineering Society.

JOHN CHIPMAN, Professor of Metallurgy in charge of the Department at M.I.T., has received the Brinell Medal for his important achievements in metallurgy and metallography by the Swedish Academy of Engineering Sciences.

Express to Top

JAMES MCGOWAN, JR., '08, Chairman of the Board of the Campbell Soup Company, has been named a trustee of the Drexel Institute of Technology in Philadelphia.

RAYMOND W. JACOBY '10, technical consultant with Ciba Company, Inc., of New York, has been elected the 13th president of the American Association of Textile Chemists and Colorists.

CRAWFORD H. GREENEWALT '22, President of E. I. du Pont de Nemours and Company, has been elected to the board of trustees of The American Museum of Natural History.

DONALD B. SINCLAIR '31 has been appointed vice-president for engineering of the General Radio Company.

CECIL BOLING '32, President of Bush Manufacturing Company, Connecticut, was installed as treasurer of the American Society of Refrigerating Engineers.

PIERRE S. DU PONT '33 has been elected secretary of the Du Pont Company.

CAPTAIN ROBERT E. PERKINS '35, U.S.N., became supervisor of shipbuilding and Naval inspector of ordnance in Quincy, Mass., on January 1.

ROBERT G. MARCHISIO '39 has been appointed a vice-president of CBS-Hytron, a division of Columbia Broadcasting System, Inc. Mr. Marchisio will have general authority in all phases of the CBS-Hytron operations.

ROBERT S. HARPER '40 has been elected a vice-president and director of Greenfield Tap and Die Corporation.

HENRY C. PLATT '42 has been elected executive vice-president of the Engineered Castings Division of American Brake Shoe Company.

Obituary

WILLIAM P. ATWOOD '76, December 28.

EDWARD L. PIERCE '86, December.

HOWARD B. S. PRESCOTT '86, December 1.

GEORGE A. CAMPBELL '91, November 10.*

HENRY F. NOYES '91, March 17, 1953.

FRANCISCO DE MIRANDA PINTO '91, October 26, 1951.*

EDWARD F. GLOVER '92, Date unknown.*

HENRY M. GREENE '92, October 2.*

HORACE C. HARTSHORN '92, July 29.*

JOHN F. LINDER '92, November 29.*

JOHN F. TOMFOHRDE '93, November.

LATIMER W. BALLOU '95, December 2.*

SAMUEL S. SADTLER '95, November 2.

BUTLER AMES '96, November 6.*

CHARLES H. GIBSON '96, November 17.*

HENRY G. GRUSH '96, December 9.

MEYER J. STURM '96, November 30.

ALFRED S. HAMILTON '97, September 26, 1953.*

GEORGE F. HATCH '97, Date unknown.*

RICHARD WHITNEY '97, September 2.*

WALTER W. BONN '99, November 8.

LESTER A. NEWELL '99, September.*

THOMAS P. ROBINSON '99, November 22.*

WARREN I. BICKFORD '01, November 15.

JAMES H. BROWN '02, October 13.*

FRED C. RANDALL '02, August 28.*

HAROLD N. CROSS '03, November 11.

ARTHUR H. LANGLEY '04, November 13.

FRED W. SIMONDS '05, December 7.

ELIZABETH J. STRONGMAN '05, June 4.*

MRS. J. WALLACE TAYLOR '05, July 29.*

LEON H. DAVIS '06, September, 1952.*

LEWIS A. RILEY '06, September 24.

ROBERT INGLEE '09, September 26.*

ALBERT B. WERBY '11, June 13, 1953.

WILLIAM S. CROST '13, September 10.*

EDWIN C. GERE '13, September 10.*

NORMAN D. DOANE '15, November 14.*

BLISS K. WENTWORTH '15, December 17, 1950.*

ALBERT C. LIEBER '16, November 9.

JAMES C. MERRITT '16, November 7.*

MELVILLE H. ROOD '16, December 1.

EVAN R. WHEELER '17, November 14.

DANIEL J. HENNESSY '20, November 27.*

PAUL J. THAYER '22, January, 1950.

GEORGE W. EMERSON, JR., '24, October*

JAMES R. HANCOCK '24, December 2.*

ROBERT CROSBY '25, August 12, 1952.*

EWAN R. HAYES '27, July 19.*

MANUEL LIWANAG '27, December 19,

1953.*

THOMAS F. MORRIS '33, December 3.

EDWARD R. TITLEMAN '45, December 11,

1954.

RALPH L. STREAN '48, May.*

* Mentioned in Class Notes.

News FROM THE Clubs AND Classes

CLUB NOTES

Atlanta Alumni Association of M.I.T.

The Association observed their annual banquet and ladies' night on Saturday evening, December 4, at the Atlanta Driving Club. After election of new officers for the ensuing year, a package sale was held in order to raise a little money for emergencies, as we have no annual dues for membership.

E. E. Sanborn'22, was elected the new president, and William E. Huger'22, was elected permanent secretary. The following Alumni and their ladies were present: Mr. and Mrs. Cecil A. Alexander'43, Boris W. Boguslavsky'38, Mr. and Mrs. W. B. Erb, Louis Grangent'11, Mr. and Mrs. William E. Huger'22, Mr. and Mrs. Leon B. Locklin'28, Mr. and Mrs. D. A. Polychrone'47, Mr. and Mrs. C. S. Read'18, Mr. and Mrs. E. E. Sanborn'22, Mr. and Mrs. L. H. Turner'99, Mr. and Mrs. T. E. Williams, and Mr. and Mrs. Louis C. Young'36. — L. H. TURNER'99, *Secretary*, 625 Sherwood Road, N.E., Atlanta, Ga.

Boston Luncheon Club

The opening meeting of the 1954-1955 season took place at the Union Oyster House on Thursday, October 21, 1954. Seventy-nine members and guests were present to hear Dr. Walter W. Rostow of the Center for International Studies at the Institute speak on "Communist China."

The second meeting of the season was held on Thursday, November 18, 1954, with 75 in attendance. Julius A. Stratton '23, Vice-president and Provost, talked on "Plans and Speculations for 1956," concentrating in his remarks on the physical sciences.

Several factors are working toward a necessary expansion in the Institute's educational facilities: (1) the nation's tremendous growth in population will bring a flood of young people to college age over the next few years, with an increasing proportion wanting a technical education; (2) the proliferation in the body of knowledge comprising science and technology, which may be contrasted with the relatively static content of the classics and liberal arts; (3) a desire on M.I.T.'s part to broaden education by entering new and allied fields; and (4) the trend toward the fundamental, theoretical, and mathematical in both science and engineering. This last point is particularly significant in that it changes the composition of the Institute. The old pragmatic rules are no longer adequate, and to meet the new objectives, the Physics and Mathematics Departments are finding it necessary to give service courses to juniors, seniors and graduate students of aeronautical, elec-

trical, mechanical and, to a lesser extent, chemical engineering. Despite the strength of this trend, Dr. Stratton wondered if current views may not be over-emphasizing the abstract.

The new Karl Taylor Compton Laboratories will provide much needed space for fundamental research in nuclear physics and electronics, now housed in decrepit temporary buildings. It will also help to alleviate what Dr. Stratton believes may be the next great requirement at the Institute—additional classrooms. The importance of electronics is often lost sight of in the gadgetry of radio and television.

It was pointed out that one may distinguish two main streams of research in modern electronics. The first of these is represented by a great complex of problems relating to the collecting and communicating of information. This processing of information includes computations of every conceivable sort and the application of the filtered results for purposes of control. Important though the application of electronics may be to radio and television, this may well prove to be a minor role as compared to the impact of electronic research upon industry and society through our increased powers to compute, to predict, to inform and to control. In the second stream of development one observes enormous advances in the field of instrumentation. Our rapid strides in making quantitative measurements are affecting not only industrial growth but also the course of research in many areas of science, and are contributing particularly to the solution of some of the most fascinating problems of biology, physiology and medicine.

The new building will be 300 feet long and five stories in height, plus a penthouse. It will run from the Dorrance Building toward Vassar Street. One of the essential facilities it will offer is a large lecture hall, seating 425, as a supplement to Room 10-250. Its cost, including the nuclear reactor, will be about \$4,000,000. The remaining \$3,000,000 being sought will supply an operating endowment.

Marshall B. Dalton'15 reported informally on the drive for funds. The Alumni Fund will redouble its efforts this year and all proceeds will be devoted to this objective. Alfred P. Sloan'95 has consented to serve as chairman of the committee soliciting corporations and foundations. The results have been most encouraging to date, and Mr. Dalton expressed the hope that if everyone pulled his oar the Kick-Off Dinner scheduled for next April could well turn out to be a Victory Dinner. — VINCENT T. ESTABROOK'36, *Secretary*, B. Standish Ayer and McKay, Inc., 50 Congress Street, Boston 9, Mass.

M.I.T. Club of Chicago

Rolling along with the 1954-1955 calendar of events, on December 7 the Alumni of Chicago spent a pleasant eve-

ning enjoying good company and food and listening to a most interesting talk by Horace Ford.

The meeting was held in the Furniture Club, whose gay decorations were reminders of the Christmas season which had crept up on us once again. Following our custom a friendly cocktail hour gave every one a chance to whet their appetites and also to catch up on old friendships and to establish new ones. We have long since discovered that Chicago has a constant flow of new members moving into the city, and as a result each meeting brings out a number of new faces.

Bob Wise'28, President, presided at the dinner which was capably arranged by Hal Davis'40. Besides Horace Ford'31, we were glad to have another guest from the Institute, Joe Jefferson, from the Admissions Office who had been visiting some of the city's high schools. Horace Ford spoke informally concerning the activities of the Lincoln Project which was a subject of real interest and importance. Once again every one was very glad to hear a first-hand report about some of the vital developments being carried on at M.I.T. The nature of the material and the sense of humor of the speaker combined to make Horace Ford's talk one that was enjoyed by all.

At the meeting the Alumni received news of some of the other events planned for the current season. The schedule includes a plant visit to the R. R. Donnelley publishing company in January, dinner meetings in March and April, and a luncheon meeting in May. Thus, life rolls on with the M.I.T. Alumni in Chicago. — ROBERT S. FAUROT, 2-44, *Secretary*, 4115 Ogden Avenue, Chicago 23, Ill.

M.I.T. Club of Kentucky

The Club held its Fall Dinner Meeting on November 17 at the Wynn Stay Club, Louisville. Officers elected for 1954-1955 are: President, Frank P. Wardwell'38, Vice-president, Albert L. Entwistle'26, Secretary, James R. Kane, 10-44. The Nominating Committee was headed by Past President Archie P. Cochran'20 and retiring President Craig P. Hazelet'18.

Among the members attending the November 17 dinner and the most recent monthly luncheon meeting were: Wallace Newberger'06, Frederick Stover'10, Craig P. Hazelet'18, Mason Noyes'19, Archie Cochran'20, Charles Breithel'22, Albert Entwistle'26, Melvin Sack'28, Allan Cook'34, Arthur Cary'34, George Morrisette'35, Frank P. Wardwell'38, Gus Griffin'39, R. E. Christie'39, Donald Dissly'43, Walter Roberts'43, Harry Lichtefeld'43, James Kane'44, John Dawson, 2-44, Howard Edwards'45, Harry Scales'46, John Dedrick'48, Dan Harms'48, T. R. Metzger'50, Edward Schickli'50.

The Club is planning a Christmas party, Friday, December 17, 4 to 7:30 P.M. at the Pendennis Club. The monthly luncheon meetings, first Monday of each

month at the Pendennis, will be continued in '55. Visitors are most welcome. — Frank P. Wardwell'38, *President*, American Air Filter Company, Inc., Louisville 8, Kentucky.

M.I.T. Club of the Lehigh Valley

The annual Fall Industry meeting of the Club was held in October last year in Reading, Pa. at the Wyomissing Club. Henry Gastrich, 2-44, Course 11, showed two movies covering activities of the Textile Machinery Works. This company is the largest manufacturer of full fashion knitting machines in the world and exports this equipment for stocking manufacture all over the world. The growth of this industry based on the skills of artisans who emigrated from Europe was the subject of the discussion. A lengthy question and answer period followed. There was much interest in the operation and intricacies of manufacture of this equipment. Arrangements for the meeting were made by George J. Meyers, Jr., '29. The next meeting is scheduled for February and will be held in Allentown. — JOHN M. SMYER'35, *Secretary*, R.D. #4, Bethlehem, Pa.

M.I.T. Club of Milwaukee

James M. Barker'07, Chairman of the Board of the Allstate Insurance Company and Life Member of the M.I.T. Corporation, was guest speaker at the dinner meeting of the Club on Thursday, December 9, at the Wisconsin Club. Mr. Barker's unique position as an Alumnus, a former member of the faculty, a member of several visiting committees of the Institute, a director of numerous financial and industrial organizations, and a member of the Corporation permitted him to speak with considerable authority on "What Engineers Do." His subject was particularly appropriate for the occasion, for 15 principals, headmasters, and senior student counselors from Milwaukee City and suburban secondary schools were present as guests of the Club.

Mr. Barker reminded his listeners that education is a process of developing mental disciplines. Whether or not the student later is engaged in a vocation similar to his field of study is immaterial to his success if he has acquired the ability to reason inductively and to apply his general principles to various specific problems. The fact that so many Alumni of M.I.T. are authorities in many diverse fields of human activity is testimony to the effectiveness of their education. Furthermore, Mr. Barker pointed out, the curriculum is constantly subjected to intensive examination by faculty and visiting committees to assure that it meets the critical standards demanded in a highly complex society.

Members present at the meeting were G. Y. Anderson, Jr., '24, W. H. Arndt'51, J. B. Ballard'35, D. R. E. Barnaby'38, M. F. Biancardi'40, R. E. Boeck'28, W. R. Bohlman'49, P. N. Cristal'17, A. G. Hall'25, F. E. Hamilton'07, C. Haeuser'51, A. E. Jakel, 2-44, M. D. James'27, J. W. Martin'47, C. E. Meyer'36, J. C. Monday'51, N. H. Miller'26, W. H. Schield, Jr.,

'46, C. L. Sollenberger, 10-44, E. J. Van Patten'24. — WILLIAM R. BOHLMAN'49, *Secretary*, 4675 N. 104th Street, Wauwatosa, Wis.

M.I.T. Club of Northern New Jersey

Over 137 members and guests attended the late fall meeting of the Club held at the Hotel Suburban in Summit on December 2. First on the agenda was a short business meeting. President Jack F. Andrews'33 reported on the Board of Governors' meeting which was held on November 16 at the Hotel Suburban in East Orange. At this latter meeting, Treasurer Joe Wenick'21 reported that as of November 16 the Club had 150 members and had cash on hand of \$1322.54, including the \$863.80 remaining from the last fiscal year. He also reported that the Club experienced a net loss of \$18.75 on the fall smoker that was held on September 30 even though 110 members and guests were in attendance. Joe also gave the results of the survey that was taken at the September 30 meeting concerning the intended 20th Anniversary Scholarship to be given by the Club in the spring of 1955. Only 88 of the 110 present at that meeting filled out the questionnaire. Of these, 70 voted in favor of the scholarship and 63 of the 70 replied "yes" to the question of whether or not they would be willing to contribute to the scholarship fund. In answer to the third question most of the ones answering favored contributions of \$5 to \$10, although several said they were willing to give \$25 to \$30. The Board of Governors accepted these figures and approved an amendment limiting the amount of the scholarship to \$500.

President Andrews'33 then appointed a committee consisting of Geoffrey M. Rollason'13, chairman of the scholarship committee; Sumner Hayward'21, chairman of the educational council committee; Joe Wenick'21, chairman of the finance committee and others to be appointed as needed to go ahead with the details of making plans for the raising of the necessary funds, setting the requirements and qualifications for the scholarship and the other things necessary in awarding a scholarship. The Board of Governors also nominated Clayton D. Grover'22 to be a member of next year's Nominating Committee of the Alumni Association of M.I.T. The necessary petitions were then passed among those present for signing since a minimum of 50 signatures is required to place one's name on the Alumni Association's annual ballot.

President Andrews then turned the meeting over to the Meeting Chairman, Herman A. Affel'14, to get the evening's program on color television under way. It is interesting to note that our fellow member Herm Affel, now an assistant vice-president of Bell Telephone Laboratories, was coinventor of the coaxial cable which is one of the key links in the nation's coast-to-coast television network. Mr. Affel introduced the speaker, Mr. Irving Lempert, who is assistant engineering manager of the Westinghouse Television and Radio Division in Metuchen. After describing some of the background concerning the development of the pres-

ent color TV system, Mr. Lempert then explained how the color picture tube works using an "exploded" tube as a guide.

Our usual and popular social hour enhanced with a bountiful table of sandwiches, beer, soft drinks, pretzels and other trimmings wound up the festivities for the evening.

The next meeting of the Club is scheduled for Wednesday March 30 at the Hotel Suburban in East Orange at which time we shall have a most interesting program on a subject of topical interest and of great concern to many of us — the problem of professionalism and unionism. I look forward to seeing all of you there. — STUART G. STEARNS'39, *Secretary*, 25 Elmwood Place, Short Hills, N. J. JOHN T. REID'48, *Assistant Secretary*, 80 Renshaw Avenue, East Orange, N. J.

M.I.T. Club of Western Maine

The scheduled fall meeting of our Club was held at the Lafayette Hotel on November 19, 1954. Forty members and guests were present at this meeting. Professor George C. Manning'20, was present and talked to us about his recent trip to England as well as on various phases of present and possible future practice in naval architecture.

H. Stanley Weymouth'19, of 4 Brooklawn Avenue, Augusta, Me., was duly elected by our group as a candidate for the National Nominating Committee of the Alumni Association. I am a little uncertain as to whether or not Stan will compete with others in an election for this office, but in any event he has been named by our group and will run for office if he is not already in. An election of officers was held and the following have been named to serve for the next year: President — Edward J. Norris'31, 14 June Street, Portland. Secretary — Robert B. Follansbee'32, 335 Forest Avenue, Portland 3.

It was decided to hold our next meeting in the spring at the Hotel Eagle in Brunswick. The meeting will probably be held during the latter part of April. — ROBERT B. FOLLANSBEE'32, *Secretary*, 335 Forest Avenue, Portland, Maine.

M.I.T. Club of Western Pennsylvania

The second meeting of the year was held on December 6. We were particularly honored at this time with the presence of Professor Erwin H. Schell'12, Head of Course XV. As all Alumni know, Professor Schell is a very interesting and entertaining man. Before the evening meeting a special luncheon was held for Course XV men at the University Club. Course XV men present were Robert B. Donworth'21, Burleigh M. Hutchins'32, Robert A. Olsen'35, Ernest U. Buckman, 2-46, Jerome Gordon 9-46, E. Randolph Haigh'22, Marcus W. Keyes'28, Thomas T. Crowley'42, C. D. Magdsick'42. Officers of the club who were not Course XV men in attendance were Henry Avery, President; Al Oxenham, Vice-president; and Bill Laird, Secretary. While this luncheon was in session Mrs. Schell was being entertained by several of the alumni

wives at the College Club of Pittsburgh.

The dinner meeting held that night was the first mixed meeting of the year and was a howling success. Due to all the confusion I regret that I neglected to obtain a list of men and women present, so I humbly apologize to those whose names have been left out of this letter. Professor Schell gave an extremely interesting talk on the various fields of research being investigated at M.I.T. with particular emphasis on the more unorthodox subjects. There being insufficient room here to discuss the talk in detail, I recommend Dr. Schell's talk to all who may have opportunity to hear it.

Plans are not yet completed for our next meeting, but all alumni in the Tri-State area are cordially invited. — **WILLIAM M. LAIRD** '43, *Secretary*, Gulf Research and Development Company, Pittsburgh 30, Pa.

CLASS NOTES

• 1890 •

Sidney Horton has dropped his Walpole address and is clinging to his tobacco lands at Suffield, Conn.; Martin Southworth's address is now 7861B, South Shore Drive, Chicago 49. Frank Greenlaw has continued his birthday congratulations and has replies from Francis Sears and Lois Howe. The former writes: "I am in pretty good health considering our advanced years, and I hope I may be present at the 65th anniversary next June although, of course, since I stayed at the Institute only temporarily and less than a school year preceding my entrance into Harvard in the Class of '91, I am not very well acquainted with very many of our classmates at Tech." Miss Howe says: "I am still in 'rude health' and able to use my pen. Indeed I am still 'going strong' although some of my joints are stiff. I was able to take in the Convention of the American Institute of Architects last June. I went to the Fellows Lunch, being the only Woman Fellow and felt somewhat as I did when I was the only girl in a class of 65 men at Tech. I make no promises but perhaps I can come to the 65th even if I missed the 50th and the 60th." Mrs. Rathbone '20, IV, and her sister, daughters of our classmate, Captain Brownell, have left with Greenlaw a number of graduation photographs of Course I '90 and two group photos. Miss Bragg has turned over to the Secretary a replica(?) of the medal received by Sophia (Hayden) Bennett as first prize for the design of the Woman's Building for the Columbian Exhibition at Chicago in 1893, together with a letter from another Massachusetts educational institution stating they would be glad to have this replica for their museum. The Secretary has found in his memos of this exposition a picture of this large and attractive Woman's Building with the statement that it was the first such building designed by a woman and he asked the Department of Architecture if they would care to have the medal, but they declined. The Institute, since the Hayden Library was com-

pleted, allows us a limited space for a box for our files, but to the Secretary it seems this medal should be prominently displayed. Perhaps at our reunion some action can be taken. Certainly suggestions will be in order. Opinions so far received as to where and when this 65th reunion shall be held are largely in favor of limiting our celebration to Alumni Day, having our Class Meeting following the Alumni Luncheon either at the Statler Hotel, or perhaps if possible at the Graduate House. — **GEORGE A. PACKARD**, *Secretary*, 25 Avon Street, Wakefield, Mass. **FRANK M. GREENLAW**, *Assistant Secretary*, 36 Bull Street, Newport, R.I.

• 1891 •

Robert Ball writes from Cambridge, England, on October 17, 1954: "Notwithstanding retirement from active work I find plenty to occupy my time and in this interesting place there is almost always something to attract and divert one's mind from dwelling on the fact that 'the day is nearly over.' While the country is disturbed by strikes we are not directly concerned as it has always been the object to retain the academic atmosphere of Cambridge by prohibiting anything in the nature of manufactures to be established here. The expansion of the town has been accordingly confined to new buildings, adding to the needs of the University to cope with the crowd of students. (There are 17 independent colleges in Cambridge.) M.I.T. has a great reputation over here. Our professor of thermodynamics is from Tech and I am much impressed by the growing interchange between teaching staff on both sides of the Atlantic. Please remember me to any of your classmates that you meet."

We learn through the kindness of Mrs. Guy C. Peterson, co-secretary of the Class of 1901, of the death of George A. Campbell. He died at the Essex County Hospital in Montclair, N.J., November 10, 1954. He was a noted engineer and inventor long connected with the Bell Telephone Laboratories. He was a native of Hastings, Minn. He studied in Paris, Vienna, and Gottingen, and received a Ph.D. from Harvard. He investigated theoretical transmission of telephone currents for the Telephone Company and invented "shielded balance," a unique measuring apparatus, and the electric filter which permitted the sending of many conversations over the same electric pathway. The Institute of Radio Engineers medal, the Elliott Cresson Medal of the Franklin Institute, the Edison Medal of the Institute of Electrical Engineers, were some of the honors awarded him. His widow and a son, Dr. Ashley S. Campbell of the University of Maine, survive him.

The following letter dated June 9, 1954, was received by Harry Young and forwarded to me July 1, 1954: "Dear Mr. Young: I beg to acknowledge due receipt of your letter of May last directed to my father, Mr. Francisco de Miranda Pinto, to the effect of inviting him to the 63d Reunion of the Class of '91 of the Massachusetts Institute of Technology, letter which came to my hands when visiting my family in Rio de Janeiro. I regret

profoundly to let you know that my father deceased on October 26, 1951, in Rio de Janeiro after a long illness. I realize how much my father would have liked to be present at your meeting and to see again his good friends, since he used to remember constantly the agreeable time he spent, when a student, at the M.I.T. With my best wishes of a full success and entertainment at the projected reunion I beg to remain very truly yours, Raul de Miranda Pinto, Caixa Postal 739, Belo Horizonte Minas Gerais, Brazil."

I am still waiting for letters from classmates, as suggested in the last issue of class news. — **GORHAM DANA**, *Assistant Secretary*, 44 Edge Hill Road, Brookline, Mass.

• 1892 •

The Secretary has recently received notices of the deaths of four of our classmates: John F. Linder, Henry M. Greene, Horace C. Hartshorn and Edward F. Glover. John Linder died on November 29 in his 84th year at his home in Clearwater, Fla. He was a former partner in the chemical manufacturing firm of Linder and Meyer, with offices at 89 State Street, Boston. He leaves his wife, Mrs. Mary (Hunt) Linder; two sons, John F. Jr., Weston, and Robert B., Canton; also a sister, Mrs. Mary Goodwin of Brookline, and four grandchildren. Henry Greene who was with us in Course IV died on October 2 at his home in Altadena, Calif. He had retired some years ago from active work in a very successful architectural business which he had built up with his brother in Altadena. Horace Hartshorn, who was with us about a year, died at his home in Centerville, Mass., last July 29.

The Secretary has just received notice of the death of Edward F. Glover, who was with us in Course IV, at his home in Rockland, Me. The sympathy of his classmates goes out to Channing Wells on the loss of his son, Henry Cady Wells, who died in Santa Fe, N.M., last November. The son of Channing M. Wells, former president of the American Optical Company, and the late Irene K. Wells, he lived his early life in Southbridge and was graduated from Harvard University. A veteran of World War II, he was discharged in 1945 after five years of service. His work has been displayed in many museums throughout the country, including the Fogg Art Museum in Cambridge and the Addison Gallery in Andover. Harry Carlson reports that he is on his way to his winter quarters at the Hotel Buckingham, St. Augustine, Fla., soon after December 6. Arthur Ober reports that he has moved to a new home, 30 Adams Street, Lexington, Mass. Harry Burnham reports that he has also moved to a new home on Prospect Hill Road, Harvard, Mass. Frederick Meserve reports a new address: 148 East 78th Street, New York, N.Y. — **CHARLES E. FULLER**, *Secretary*, P.O. Box 144, Wellesley 81, Mass.

• 1893 •

We had a nice letter from Fred Keyes. He has been leading a very inactive life in the hope that he may have enough energy to do something worthwhile next

summer. (We hope this means he is coming east for a visit!) Our classmate has made some short trips from his home in Mercer Island, Wash. One trip was made with friends through Tacoma to Olympia, the capitol of the State of Washington. He attended the November meeting of the local A.S.M.E. Section at which Tex Rickard, the chief test pilot for Boeing Aircraft, described a few of the principal features of his company's latest model, the 707 Transport. Moving pictures were used to describe the features of this model.

Mail addressed to Hereford Berry at 3756 Linden Avenue, Long Beach, Calif., has been returned to us, marked "Address Unknown." If any member of the Class knows the correct address, the Assistant Secretary will appreciate receiving it.

A letter from Charles Johnson in Sarasota, Fla., advises that he injured his hip several years ago, by falling in a gopher hole and can walk only about 100 feet at a time. In spite of this hip trouble he is still active as a civil engineer and land surveyor. He is out in his car eight hours a day, five days a week, with his son and one or two helpers. Classmate Johnson has four children, all grown up and successful, and eight nice grandchildren. Mr. and Mrs. Johnson and one son usually take a motor trip each summer. In 1953 they drove 1,500 miles through 11 states. Last summer they drove a distance of 1,000 miles, through nine states. Our classmate has few idle moments but when he does he enjoys reading some of the many scientific and business magazines which the family receives. — GEORGE B. GLIDDEN, *Secretary-Treasurer*, 99 Chauncy Street, Boston, Mass. GERTRUDE B. CURRIE, *Assistant Secretary-Treasurer*, c/o Fay, Spofford and Thorndike, 11 Beacon Street, Boston 8, Mass.

• 1895 •

Andrew D. Fuller, Course I, who is at present our faithful class representative on the Alumni Council, notified your secretary and his intimate friend and one of our beloved class mates, Latimer Willis Ballou, Course II, passed on December 2, 1954. It has been impossible to get the complete sketch of Ballou's life work for this issue of *The Review*; when available it will be reported. Judson Dickerman, for one, has confirmed the doubts of your Secretary as to holding a regular sixtieth class reunion. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

• 1896 •

The Secretaries trust that the Christmas Season has brought all our classmates renewed courage to carry on for another year. We take this opportunity of so expressing ourselves to you. From a clipping we quote the following: "Paul W. Litchfield looked forward with relish this week to the sales battle shaping up among the rubber industry's new tubeless tires. This was, in a way, where he had come in — with a billion-dollar half-century difference. Litchfield had helped develop one of the first tubeless tires back in 1903, well before the inner-tube type took over. Now Chairman of the Board of the Goodyear Tire and Rubber Company, as he has been since 1930, he takes a look at his career

this week in his autobiography *Industrial Voyage*. . . . In 1900, he was offered a good position in Akron, Ohio. . . . This was the Goodyear firm, which Litchfield joined as plant superintendent (at \$2,500 a year). . . . Goodyear's sales were \$500,000 the year before Litchfield joined. Sales last year topped \$1.2 billion. This is not to suggest that the company's story was one of monotonous and uninterrupted growth. Litchfield saw it through at least two hair-raising crises that closely resembled deathbed scenes. In 1920, he recalls: 'I was not back where I started. It was worse than that. . . . In . . . seven months my hair turned from a chestnut brown to be almost as white as it is today.' He remarks elsewhere, with characteristically youthful enthusiasm: 'Rubber is an amazing material, unlike anything else in the world.' The white-haired boss of Goodyear is obviously made of pretty unusual material himself. 'Today is no time to relax and sit in the sun,' he writes. Last week, at 78, he announced happily that he had bought 11,000 acres of Brazilian jungle with the intention of setting up Goodyear's first new rubber plantation in 20 years."

Bradley Stoughton has been accorded an honorary membership in the American Society for Metals.

From another clipping we quote: "The famed rose garden estate of the late Charles Hammond Gibson at Nahant and his home at 137 Beacon Street, were left by him in trust as 'literary and horticultural shrines and museums for the education of the public.' . . . The trust provides that the two houses and their contents be preserved as 'complete examples of the period from 1859 to 1900.' The trust empowers trustees to give to Harvard, M.I.T. or Brown any manuscripts desired by those institutions."

The following is a note from a niece of our late classmate, Butler Ames: "Dear Dr. Rockwell, My Mother has asked me to write and thank you for your kind note of sympathy on the death of Uncle Butler. Our generation admires the ease with which your generation faces its fourscore years and the wisdom and interest with which you have lived through so many real changes and challenges. Please thank the members of the Class of Ninety-Six of Tech, as well as a personal thank you for yourself, for the expression of sympathy which is greatly appreciated by Mrs. Stevens and all her family, Sincerely, Edith J. Stevens."

It is with regret that we report the death of another classmate, Henry G. Grush. Four of our local men attended his funeral. Robinson, Driscoll, Hedge, Damon. From another clipping (dated Dec. 9) we have the following: "Funeral services will be held at noon today at the Waterman Chapel for Henry G. Grush, 80, of 1118 Brook Road, Milton. He died Monday. Born in Lowell, Mr. Grush was a graduate of M.I.T. with the Class of 1896. For the following 44 years, he was associated with the New England Telephone Company, as a consulting engineer, retiring in 1930. He had been a resident of Milton for the past 20 years. He was a member of the Masonic Order and the Telephone Pioneers of America. He leaves his wife, Vera; a son, Henry D., of San

Francisco; and three grandchildren."

Four of our classmates had a 1000/0 reunion record. See picture on page 84 of the "Red Book." Harry Grush is the third to pass on from this group. — JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge 38, Mass. FREDERICK W. DAMON, *Assistant Secretary*, Commander Hotel, Cambridge 38, Mass.

• 1897 •

The following received from Bill Potter under date of November 18, 1954, will bring forth to all of us memories of our undergraduate days: "The thing that impresses me about the Class of 1897 is the high percentage of the men belonging to that Class who either are approaching or have passed four score years. I retired from active business when I was about 72 years and it has been a great relief to wake up in the mornings and realize that there are no trains to catch, no important engagements to meet, and be a free man. I also resigned from a large number of directorships, and now I remain on only one industrial and one banking board, which boards are of unusual interest to me — one being the Anaconda Copper Mining Company, which keeps me in touch with my old profession, and the other being the Guaranty Trust Company of New York, which I joined when fate ordained that I should become a banker. I even retired as a life member of the Corporation of the Massachusetts Institute of Technology when I attained the age of about 75, and I am under the impression that I had something to do with influencing our remarkable former President, Karl Compton, to create the title of Life Member Emeritus of the Corporation, thereby relieving those honorable gentlemen who attain the age of 75 and enabling them to gracefully join a group who incur no obligations and enjoy many privileges. So I am free up to the present to enjoy a little trout and salmon fishing and play a little mild golf in the spring, summer and fall, and go to south Georgia for four or five months in the winter where I have a sizable farm producing beef cattle for the market, some horses, shooting dogs, and quail. About the only members of our Class whom I see at all frequently are Louis J. Richards, and that indestructible little man, Walter Humphreys. With my best thanks for your letter of September 27, and with my best regards and good wishes."

We received the following letter from Allen S. Crocker, Mechanical Engineer, 311 Alexander Street, Rochester 7, N.Y.: "Received your circular letter and about a year ago at Wadleigh's suggestion, I agreed to write John Collins of my experience. Sorry I had not done so. Enclosed find this description. It is long, and so take any part you like or any briefing if you care to for *The Review*. I sure have used everything that Tech taught me, and realize what a wonderful education it was to build on. Rochester has been a wonderful city to work in and to get ahead in. I have had about all the headaches and pleasures that can be encountered in a general engineering practice. About two years ago I became associated with a younger engineer, and now go to the office mornings, and spend two months

each summer at our Cape Cod camp, at Waquoit, a village of Falmouth. We are at Seaconset on Waquoit Bay, and shall be glad to see any of you that get down that way. Unfortunately my time at the Cape does not correspond with Tech or class meetings. There are 10 people in our office and on inspection work."

From the description of his experience it is clear that he is a classmate who not only has made full use of his training at M.I.T. but is one who has consistently followed throughout an engineering career of unusual accomplishments. Due to restriction in space we have been obliged to omit many interesting details. "First worked for Blake Knowles Pump Company in East Cambridge on compilation of catalogues and then established for them a chemical laboratory. Made quantitative analysis for the determination of principal elements in pig iron and sulphur in coke. Sure had to bone up on chemistry. Salary \$9.00 per week, but was getting an education. I secured position as Superintendent of Trade Schools for New York State Reformatory at Elmira, N.Y. Did not like prison life and took a position in 1899 as instructor at Mechanic's Institute, Rochester, N.Y. (now Rochester Institute of Technology). School was founded by the manufacturers.

"The institute started one of the earliest evening classes in automobile operation, care and repair. This was in the early life of the one lung Cadillac, and before any text books were published on the subject. Course was very popular and I had about 150 students at times in the class. Also taught machine design and steam engineering in the evening, and during First World War had nearly all of the operating steam engineers in Rochester in a class devoted to economics of operation. Also during this war we conducted 60-day shop and auto classes for enlisted men while in training. Had a testing machine and did extensive work in commercial testing. Experimented in our lab for a year for City of Rochester on proposed construction of bottom for a large reservoir to be built on a high hill inside city.

"While teaching, I did a good deal of work for architects, manufacturers and the city and county. Also appraised all power plant equipment in Rochester for City Assessors, as New York State decided that all equipment that would stay with a building if it were sold was real estate. This appraisal was extended to cover all utilities as Electric, Gas, Telephone and Private Water Companies. Later appraised for Assessors on all property of the five railroads that enter Rochester. Started a card system for assessors for building appraisals, which was one of the earliest systems established for real mass appraisal for assessment. For public utilities, the companies gave good descriptions of their equipment, lines and ages, and I did most of the appraisals from study of reports to Public Commissioner's office in Albany, covering preceding 20 years, and took reasonable depreciation. We found that these expenditures for 20 years (which expenditures were broken down into departments) and after allowing 5 per cent depreciation per year, greatly exceeded values on assessors's rolls.

"We checked buildings, and equipment, and placed our own values on same with reasonable depreciation on buildings. From our study at Albany and our independent appraisal, we secured a fairly acceptable assessed value. All above appraisal work was over a period of probably 15 to 20 years. One summer vacation during my teaching work I was employed in the Bureau of Yards and Docks, Navy Department, in Washington. Took over the job Fred Healy '97 had. He went into U.S. Mint service and later did work of similar kind for Mexico. Ran into Fred several times in the first World War when he was buying up small machine shops and selling the equipment for munition makers.

"After 1919, I devoted all of my time to engineering, as I could not keep up with the volume of work. I have had some very interesting experiences with various clients in general engineering work, among them are: Delco division of G.M., services covering over 25 years which included the power plant, heating, ventilating, air conditioning, design and testing work on the oil and gas burning boiler units and study of their competitor's equipment, process work, and so on, and consultant on their power house and heating and ventilating of G.M. Plant #2, here in Rochester, when it was built. 2) consulting engineer for Snider Packing Corporation on their canning plants from Indiana to New Jersey. 3) For Fanny Farmer Candy Company on their plants at Detroit, Rochester, Harrisburg, New York, and Cambridge.

"Besides construction, this covered a study of the industry in the larger competitive plants in Chicago, New York and Boston and made the design of a model plant, including all manufacturing equipment and arrangement and conveying for making 35,000 pounds of candy per day. This design was lately used for their new plant in New York. 4) Consulting engineer for Douglas Pectin Co. (Later acquired by General Foods.) Built power plants for them in Fairport, N.Y. and Coburg, Ontario, and built some buildings. 5) Consultant work for Sand Line Brick plants in Rochester, Indianapolis, and Milwaukee. Worked up the design of latter two plants and followed construction on Indianapolis plant. This included all equipment. The largest part of my work, however, has been in power plants, heating, ventilating, air conditioning, and electrical work; making plans, writing specifications and inspection of work during construction. This has included nearly all types of building and some of the largest are new U. of R., including Medical School and Hospital, Municipal Hospital, A.E.C. building, Manhattan Project Building, Cyclotron Building, and so on. This entire group is heated from one plant, and all was new construction. Eastman Theatre (seats 3,500) Eastman School of Music, over 150 schools, Medical School and Hospital, Nashville, Tenn. (This is a Rockefeller Foundation project). Most of the hospitals in Rochester, Y.W.C.A., steel plant (U.S. War job) for Symington Gould Corporation and many churches, factories, and so forth."

From the November issue of The Technology Review we learned of the death

of Alfred S. Hamilton on September 26, 1953. He last turned up, we believe, at our 50th reunion in Osterville and was indeed an interesting man of pleasing personality. If any member of the Class is in a position to advise regarding his business activities and personal history since graduation, the undersigned would be glad to report it in a later issue of The Review.

From his daughter further information has been received regarding George Franklin Hatch whose death was reported in the January Review. He spent one year at M.I.T. beginning in the fall of '96, at age 25, getting leave of absence from teaching school. "He was born in South Williamstown, Mass., on December 19, 1870. When eight years old his parents moved to Bennington, Vt. They rode on a load of hay with everything packed in the wagon and had to drive the cattle over the road 15 miles. At 16 he left high school and began work in Bennington Woolen Mills as a spinner. He worked 11½ hours a day. Later was promoted to the knitting room at \$4.40 a week and finally transferred to the carding room at \$5 a week. Later became assistant to the foreman in the carding room and his wage went up to \$7.50 a week. He was just beyond 20 yrs. old when he came to Boston to the Eliot School, Jamaica Plain, Mass. Professor Richards of M.I.T. was trustee and George went to see him and was engaged at \$60.00 a month, a small fortune in those days. He lived with his sister Flora in Roxbury and paid \$6 a week for board — sent \$15.00 a month to his mother.

"For the next six years he taught in several Boston schools and studied in evening classes. In 1898 he married Mary Milliard of Albany and had four children — two sons and two daughters. He continued teaching in Boston schools for over 40 years, often having daytime classes at one school and evening classes at another. He taught a wide variety of subjects beginning with manual training, later mechanical drawing, metal work, wood working, jewelry, book binding, design, debating, music and art. He became principal of Eliot School, Jamaica Plain in 1918 and received Bachelor of Science and Education in 1927 from Boston Teachers College. He retired from Boston School Department in 1939. Later moved to Maine and entered the real estate business. He was a Mason, Master of Columbian Lodge, and Secretary of Handel and Haydn Choral Society."

It is our sad duty to announce the death on September 2, 1954, of Richard Whitney. He had been living at 40 Wales Street, Dorchester, Mass.

Change of address: John E. Gilman, 60 Morey Road, Roslindale 31, Mass. It will be remembered that Gilman has served for many years as Clerk of U.S. District Court of Massachusetts in Boston. — JOHN P. ILSLEY, *Secretary Pro-Tem*, 26 Columbine Road, Milton 87, Mass.

• 1898 •

Our classmate, Arthur A. Blanchard, has recently been honored on two different occasions: first, by the Chemistry Department of M.I.T.; and second, by a Get-Together of the Class of '98.

Through the courtesy of Miles Sherrill, we have the following description of the first occasion: "The Chemistry Department at M.I.T. gave a tea in the Moore Room on November 22 in honor of Arthur and Jean Blanchard before their departure for Florida. This gave the Blanchards opportunity, not only to meet old friends but to greet the newer members of the Division of Inorganic and Nuclear Chemistry and some of their wives. George Cottle and George Harrison represented '98. There were also present several visiting distinguished foreign scientists. Miles Sherrill and Professor Schrumbe attended as honored guests. Group pictures were taken and at the end Professors Blanchard, Sherrill and Schrumbe (head of the Inorganic Division) were presented with large cakes frosted with appropriate lettering. A short presentation speech was made for each recipient. Frosted on the top of Blanchard's cake was '98 for his class; on top of Sherrill's cake was '99 for his class; and on top of Schrumbe's 100 for the number of his scientific publications." We understand that almost a hundred persons attended the tea; and all with whom we have talked, spoke most enthusiastically of the happy event.

If you are an erstwhile reader of *Alice in Wonderland and Through the Looking-Glass* you will appreciate the second occasion, the Get-Together of the Class to honor Arthur Blanchard. A card was sent out to those in the vicinity of Boston, some 56 in all, which read in part as follows: "A Tribute to our Classmate, Arthur A. Blanchard, who for 30 years served the Class as Secretary. We will meet Monday, December 13, at Novaks Towne Terrace, Brookline, for a Buffet Tea, after which we will adjourn to Arthur's nearby home, to greet him and to enjoy George Cottle's pictures of his latest trip to Europe." Now comes the crux! Arthur by a generous gesture insisted on paying for the dinner for the whole crowd, so that the surprise party was on us. However, we rallied a bit, and staged a surprise of our own, as will presently appear.

There were 15 present at the dinner; Agnes and Elliot Barker, Marion and Edward Chapin, George Cottle, Fred Dawes, Clarence Goldsmith, Fred Jones, Eva Crane Morrill, Theodore Morrill (M.I.T.'31 but an adopted son of '98), Joe Riley, Marion and Ernest Russ, Miles Sherrill, and Maurice de Kay Thompson. The evening really divides into two parts. First, the dinner which the 15 enjoyed and during which we planned our surprise; and secondly, the call on the Blanchards and the showing of the pictures. My, what a dinner; and such a setting! We had a private room at the celebrated Brookline restaurant, set up especially for 15. Lovely dishes, with a delicious fruit cup set out to attract. Followed a choice of lobster Newburg or creamed chicken, with potatoes, any form, and honest to goodness real peas, rolls — pecan, soft, and hard, and salad (don't you who didn't come now wish you had?) topping off with a specialty of the house, a baked Alaska, in a flower pot with a chrysanthemum protruding from the delicious confection, and coffee or tea.

What was the surprise planned? A gift to Jean Blanchard, a set of faceted ear-

rings. It seems that Eliot Barker was familiar with the fact that Dan Edgerly's old firm, the National Lead Company, makes gems from titanium ore; and also with the fact that Jean Blanchard admires such earrings. So Elliot wrote to Dan, who promptly secured and mailed the gems for the festive evening. With Dan's generous contributions, then it was up to the Class to arrange for the setting. A class meeting was held at the dinner. Whereas certain members of the Class would willingly have paid for the settings, it was considered preferable to have the gift come to Jean as from the whole Class. Accordingly, it was decided and voted to take up a collection from those present, the balance of the cost to be taken from the Class Treasury. The surprise having thus been arranged we adjourned to the Blanchard home for the second part of the evening.

Surprises seemed to be the order of the evening, for as we stepped into the Blanchard home, who should be on the 'phone but Seidensticker talking from Montreal to Arthur. (He had previously sent to the Secretary a lovely letter of greeting). While George was setting up his apparatus for the pictures, we read greetings and tributes to Arthur from 22 members of the Class, who regretted their inability to be present. Then, came our surprise. Eliot Barker not only originated the idea, but being of a poetical mind, rose and read the following:

"As we meet to-day in this pleasant home, the home of Arthur and Jean, we look ahead to the future, to views that can not be seen. / It is good to meet together, to chat of the years of yore, / to think of the blessings around us, what the future now has in store. / So we offer a little token, such as Arthur might give to Jean, / to show that the old ninety-eighters hold you both in highest esteem."

He then presented a surprised Jean the token, the titanium gems, enclosed in a jewel box, tied daintily with a red ribbon. Arthur was plainly moved; Jean rallied quickly and was delighted with the gift. The final surprise of the evening — surprise only to those who had never seen George's pictures before — was the showing of his pictures. He took us through Spain, Vienna, Salzburg, Innsbruck, the Tyrol, Carinthia, Bavaria, Germany, Sweden, Scotland and Paris. "And still they gazed and still their wonder grew" as George, quoting from literature and history, showed artistic and carefully selected pictures, movies and stills, of cities and hamlets, mountains and country sides, lakes and gardens, churches, castles, hotels, and scenes and incidents giving a personal touch to his trips.

Among the innumerable remarkable views and shots, we might mention a few: the Feria (the after Easter Carnival) of Seville; the patios of Cordova; the fountains and halls of the Alhambra at Granada; the Votive Kirche at Vienna; the mountains and lakes in and around Salzburg and Innsbruck; especially the beautiful Konig See and the marvelous Gross Glockener Mountain; the hotels at Salzburg and Baden-Baden; the window flower boxes of Austria and Germany, the gardens and summer homes of Sweden; Ellen's Isle in Scotland; and finally several

incredibly clear pictures of the remarkable stained glass windows of the Saint Chapelle at Paris. The Blanchards served orange juice and sherry; and then after a few minutes of cozy conversation, well-wishing and parting greetings, the Get-Together adjourned after a happy evening of unexpected and memorable surprises, alike for host and hostess and classmates.

We have received the following interesting letters. From Will Steffens at 100 Park Avenue, Mount Vernon, N.Y., as follows: "Dear Classmates, Daniel Edgerly, Edward S. Chapin, Greetings! This is just a note to ask you to change my mailing address as indicated above. I have had some interesting experiences since '98 and some day may find time to record a few. When Ed rides the B&A RR he passes over bridges renewed under my supervision 1910-1913, as approved by Professor Swain for the Mass. R.R. Commission, a normal program for eight years, but accomplished in four years, safely and economically. Prof. S. was amazed to witness one Sunday morning six spans moved to position in 45 seconds, with first train over the new structure in 20 minutes after the preceding train had passed over the old. At Worcester the heaviest railroad girders ever built caused him to congratulate me for courage to undertake such an unusual design. But I was fortunate to produce still larger structures for Clinchfield RR in the South. Seven loops over mountains, 20 miles to cover four miles in drop of 1,200 feet in such rugged location. Nufsed? William F. Steffens."

Thanks, Will. We will think of you and the remarkable feat of engineering described in your letter when in the future we ride through or drive by the Worcester station of the Boston and Albany R.R.

Maurice Delano writes, also from a new address, 9 Ellis Road, Havertown, Pa., as follows: "On June 28, Mrs. Delano passed away. She had her first heart attack on Jan. 17, 1953. The final one was her sixth. We were married on September 26, 1900. No finer wife and mother ever lived and I was very fortunate to have her nearly 54 years. She was with me at Lake Placid, and at our 40th and 50th re-unions, so you and a number of other classmates knew her. Our children were wonderful to us, and now are to me. On the 18th I moved over here to live with my daughter, Eleanor, and her family. No son could be finer to me than is Eleanor's husband, Dr. Polishook. Here I have a 13-year-old grandson, and a 10-year-old granddaughter. Maurice, Jr., lives in Fair Haven, N.J., near Red Bank and has three sons and a daughter. Margaret lives in New York. So, am close to all my family. Will you please send my change of address to The Technology Review? I have not found my copies here as yet. I have boxes in the cellar, attic, and in my room. Just allowed to climb stairs once a day, so, very slow work getting the things I want. Particularly anxious not to miss the current issue as you promised lots of notes in this issue. Ninety-eight has been very fortunate in its Secretaries who have devoted so much of their time to keeping the class spirit alive. And in its presidents and other class officers who have helped you Secretaries so wonderfully. Warm personal re-

gards, Ed, for your 'Heavenly Twin,' George; for our grand Assistant Secretary, Barker; for Ernest Russ (who caught the ball game at our 25th); and for any of my old classmates you see. Sincerely, Del."

Thanks, Del. One fact you omitted to state, Del, in your letter was the name of the pitcher, whose mighty heaves and curves were caught by Ernest: one Maurice F. Delano. — EDWARD S. CHAPIN, Secretary, 463 Commercial Street, Boston 13, Mass. ELLIOT R. BARKER, Assistant Secretary, 20 Lombard Road, Arlington 74, Mass.

• 1899 •

Miles Standish Sherrill, V, spent most of last summer in the Middle East and Western Europe. As might be expected of a Technology professor emeritus, his story of his travels needs but little editing. "After sailing on the *Independence* of the American Export Line for Naples, and flying from Rome to Tel Aviv by K.L.M., I joined some very close friends, the Coryells, in Rehovoth, Israel, on May 17. I stayed with them at the Guest House of the Weizmann Institute of Science until June 27, when we started our homeward trek together. By way of introduction, Charles Coryell is Professor of Nuclear Chemistry at M.I.T. He was on sabbatical leave as a Louis Lipsky Fellow at the Weizmann Institute (called Machon in Hebrew), and was accompanied by his wife, Grace Mary, and 10-year-old daughter, Julie. Julie's age plus mine differs but slightly from the sum of the ages of her parents. This will indicate what a rejuvenating experience it was for me to cast in my lot with this family for over four months. During my 40 days in Israel I just loafed, although on Shabbat weekends we usually had a Machon car with driver for sight-seeing trips.

"Our first trip was to the Israel part of Jerusalem to ascertain ways and means of later passing the Mandelbaum Gate into Jordan. From Mount Zion in Israel we could look across a no man's land and the walls of the Old City of Jerusalem to the Mount of Olives in Jordan. It is impossible for a Jew, or even a Gentile if his passport has Israeli markings, to cross to Jordan. I had anticipated this difficulty by securing from the Israel Consulate in New York a short term visitor's visa to Israel as a document separate from my passport. As this alone was stamped at the Tel Aviv Airport, the passport itself showed no Israeli markings. The American Consul in Jerusalem helped us communicate with a Mrs. Vester, who for many years has managed the American Colony in Jerusalem on the Jordan side. She is decidedly pro-Arab and has considerable influence with the Jordan authorities. My wife and I met Mrs. Vester in 1922 when she returned to the U.S.A. to provide for the education of her children in this country. In order to communicate with Mrs. Vester letters were smuggled to and from Jordan through the intermediary of the American Consul. With such help we had no difficulty in crossing into Old Jerusalem on June 27.

"The Guest House of the Machon in Rehovoth is one of a group of buildings for staff and visitors in the so-called Shikune. I believe Shikune in Hebrew means

a neighborhood. The watered lawns, gardens and trees of this housing project add greatly to its attractiveness. Here we met mostly Jews. All, except the help, were highly educated and cultured. Every one was most cordial and we were frequently entertained at tea, supper, and garden parties. All this led to new friendships. Our second sight-seeing trip was to Ascalon in the southern part of Palestine near the Egyptian border. King David was in Ascalon when he laments the death of Saul. We saw there some interesting Hellenistic antiquities and Crusader ruins. Lady Hester Stanhope, that erratic English woman who became famous in the Middle East by her fantastic travels, had made excavations there in search of treasures, but found only a colossal statue which she ordered to be broken and cast into the Mediterranean Sea. The best part of this trip was a picnic on a secluded beach and a sea bath. On some of these Mediterranean beaches immense granite columns have lain for centuries washed by the waves. Grace Mary, a professor from the Hebrew University in Jerusalem and I wandered amid deserted Arab huts looking for antiquities. Here on a previous visit Grace Mary had found a fragment of a marble slab engraved with Greek letters in an ancient form of script. We dared not wander nearer to the Egyptian border for fear some Arab might take a pot shot at us.

"On a third trip, this time to northern Palestine, we were accompanied by Anna Weizmann, sister of Chaim. She is a most interesting woman about 65 years old and still active as an organic chemist at the Weizmann Institute. As we visited on this trip Haifa, Aker, Nazareth, Tiberias and an Arab village, her knowledge of Hebrew and Arabic enabled us to get acquainted with some of the Moslem customs. Our first night was at Haifa, and the next one (a Saturday) was in a mountain resort called Safad overlooking the Sea of Galilee. It being Shabbat, the streets were crowded with townspeople. That day we had bathed in the Sea of Galilee and seen the Jordan flow out of Galilee to continue its course to the Dead Sea. On an air-flight from Jerusalem to Beirut at a later date, we could follow by eye the river's tortuous course. The third day we returned to Haifa and then to Rehovoth via Jaffa. In an Arab village a Druse Arab with characteristic headgear and seated on the rump of a diminutive donkey, passed, leading two stately camels.

"On another Shabbat we visited Athlit where there are ruins of the largest of the Crusader Castles. It was awe-inspiring in roaming through these ruins to let one's imagination play and people the walls with helmeted crusaders. As at Ascalon we found here a sandy beach for a sea bath and a picnic. You can judge from the above that my 40 days in Israel were spent idly with much fun. All this part of the summer was restful and prepared me for the intensely interesting but rather strenuous journey home. Old Jerusalem and Istanbul were to me the high spots of the Middle East. In Jerusalem just outside our rooms at the American Colony Hotel we could watch a Muezzin climb at regular intervals to the top of a minaret to call the 'faithful' Mohammedans to prayer. We walked through the streets of Jerusalem

both during the busy daylight hours and also at night when the narrow streets were deserted. This walk at night was taken to witness the closing of the heavy Damascus Gate to the city after dusk. It gives one a spooky feeling to tread the narrow streets at night, so we were very careful to be outside the walls when the gate was closed and bolted.

"We flew from Jerusalem to the Beirut Airport where we connected with a second plane to Istanbul. The flight took us first over Mount Hermon into Lebanon, and then over that high Turkish plateau where the new capital, Ankara, is situated. In Istanbul we were met by a Turkish girl who had done research with Charles at M.I.T. in 1953. She brought with her to greet us two young Turks connected with the University of Istanbul. She herself has a Ph.D. from this University and is still employed there. She introduced us to the Dean of the University, who kindly put at our disposal a car with chauffeur during our stay there. This Turkish girl, Kayacan Tonguk, invited us with the young Turks to her home across the Bosphorus to meet her family (father, mother and two sisters) for a typical Turkish meal. As we ferried across at sunset, the view of the receding magical Istanbul was very beautiful.

"The next day we flew to Athens. Athens is now a modern city and too clean to be as fascinating as Istanbul. Of course the Acropolis could not be spoiled by the well-kept city. In Athens we got the sad news by telegram that Charles' car, a British made Ford called the Consul, could not be delivered in Rome on scheduled time. To overcome this difficulty after arriving in Rome by air we decided to fly to Paris, Charles continuing on a second plane to London to get direct delivery. He was back in two days, just in time to celebrate Bastille Day with his waiting family in Paris. From then on we were independent of train or plane schedules. After about a week in Paris our travels in the Consul took us through France, Switzerland, Italy, the Dolomites from Venice to Innsbruck and Munich and back to Paris. We then toured Belgium and Holland before taking the ferry at Ostend to Dover in England.

"In the course of our travels Charles contacted many atomic scientists to exchange ideas and to discuss common interests. We as a family were often entertained by these scientists. At the University of Ghent he gave a lecture on nuclear chemistry, which was attended by the mayor of the city, and the faculty and students. In England we motored over what might be described as an enlarged Route 128 encircling London instead of Boston. The places we saw included Canterbury, Cambridge, Oxford, Stratford-on-Avon, Birmingham, Droitwich, Swansea in Wales, Lyme Regis in Dorset, Salisbury, Windsor, and London in that order. Our passage to New York on the *Mauretania*, arriving September 16, was uneventful with no hurricanes or rough seas. I am still getting adjusted to home life."

Thomas Pendleton Robinson, IV, 76, of 46 South Pleasant Street, Hingham, architect, author and playwright, died on November 22 at his home. A founder of

Derby and Robinson, an architectural firm for 30 years in Boston, he later became a writer on architecture and was a member of the American Institute of Architects. Among buildings he designed was the old Hingham High School. He wrote four plays that were produced on Broadway in the 1900's and at one time was associated with Professor George P. Baker at Harvard and Yale as a technical adviser on play production. He was the author of numerous successful children's books. Born in Calais, Me., he was graduated from Chauncy Hall in Boston and from the Institute in 1899. He leaves his wife, Ethel Fay, and three sons.

News of the death of Lester Newell, III, of 2809 Berch Street, Denver, Colo., was received recently.

The address of Alfred W. Lombard, VI, is now 7 Bates Road, Arlington 78, Mass. — B. R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. MILES S. RICHMOND, *Assistant Secretary*, South of Common, Little Compton, R.I.

• 1900 •

Have you made your plans to attend our fifty-fifth reunion next June? Details of dates, times and places will be given soon.

Harry Grant sends a story which he and his wife are enclosing with their Christmas cards, telling of their travels. It says, in part: "We are going abroad again for six months, sailing from New York on December 11 on the *SS Independence*, American Export Lines. We are planning on January in Rome, February in Paris and March in London. Then we will motor through France and Switzerland in April and May. Last April, we found ourselves unexpectedly in Rome on Easter Sunday. This was one of the high spots of our trip. We stood in the tremendous throng before St. Peter's at noon in spring sunshine and received the Pope's blessing with tens of thousands. Another high spot was our flight from Rome to Istanbul where we spent a week near Robert College with old friends. In Istanbul we visited the enormous mosques dating back to the sixth century, St. Sophia the largest; the Blue Mosque the most beautiful. On the way to Istanbul we stopped in Athens and climbed to the Parthenon. Spain was only part of our trip but was new to us and fascinating. We visited the great cathedrals in Seville, Granada, Toledo and elsewhere the museums, especially the Prado in Madrid, the Royal Palaces, especially in Madrid and El Escorial. In all of Spain the children interested us most. They are healthy, happy, vigorous and beautiful. Vienna was another high point with its opera, symphony and ballet, Schonbrunn Palace and gardens, the Hofburg Winter Palace, and the Prince's Palace. We drank beer at a little table in the park under lilacs and blossoming horse-chestnuts.

"La Scala, the opera house in Milan, is a vision long to remember with its tiers of boxes extending to the ceiling. Upon our return we spent several days in Kent, Connecticut, and then a happy summer and fall at our home, Barber Farm, Jericho, Vermont."

We have received indirectly some information about Stan Fitch which his

modesty has evidently kept him from divulging to us directly. It seems that he was in the hospital last July for a minor operation from which he has quite recovered. After recuperating at Nantucket during August he went to Tegucigalpa, Honduras, to visit his stepdaughter, Louise, and her husband, who is U.S. Ambassador to Honduras. He reports this to be a delightful place with lovely climate and many things of interest to see. He flew to Tela, on the Gulf, to visit the Experimental Agricultural Station, guest of the United Fruit Company. On his way home he was to visit Guatemala City.

Bob Leach has given a very brief account of himself. After mining and metallurgical work in Idaho, the Black Hills of South Dakota, Northern Michigan, Calumet and Hecla and Copper Range and British Columbia, he went, in 1914, with Handy and Harman, who deal in precious metals in all forms for arts and industries. He was engaged in research and development and administrative work and plant design and construction. After forty years of administrative work with this company he is now serving as a director, vice-chairman of Executive Committee and Technical Consultant. He reports four daughters and three grandsons.

Philip F. Ripley reports from Andover, Mass., that he is Chief Chemist for the American Woolen Company. He is a member of the American Chemical Society, Society of Chem. Industry and A.A.T.C.C. He is a member of the Congregational Church and has held almost all offices from deacon down. He has been a member of the Town School Committee, and a Town Library Trustee. For hobbies he says that he is prevented by rheumatism from doing about everything except cross-words. However, his two children and six grandchildren must give him a continuing interest. — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

• 1902 •

Dan Patch recently received a letter from Professor E. O. Eastwood, XIII, who has long been with the University of Washington in Seattle. He was the head of the Department of Mechanical Engineering at the time of his retirement seven years ago. He says he still goes down to his office at the University each day and usually for all day except for two hours spent at the Faculty Club. He has two daughters and four grandchildren. Eastwood's *Alma Mater* was the University of Virginia and he usually spends June and July of each year in that state. He has never been back to Boston since going West but has been to Swampscott once, presumably at some professional gathering. He recalls some of the men in the course but has met none since leaving, and suggests that Dan send him his photo so that he can see what changes 52 years has made.

John Marvin has also written Dan giving news of his activities. This last summer he has been doing a little traveling and taking photographs along the way. Was out in Aspen, Colo., in September when the aspens were in their full autumn color and found that against a background of the dark green firs and other evergreens

the color effect was wonderful. At Aspen he learned that Red Proctor has there a marble quarry of the finest white marble but the altitude makes it very difficult to work. Marvin promises that he will have some fine pictures to show in 1957.

Word has been received of the death of James H. Brown, on October 13, 1954, at Berkeley, Calif., and also that of Fred C. Randall, at Havana, Cuba, on the 28th of August, 1954. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

• 1903 •

Ed Ruxton and Carlton Green have been doing some figuring and both come up with the fact that our Class is not doing what it should by the Alumni Fund. The graph sent out from the Fund headquarters shows '03 less than the adjoining classes by appreciable amounts. For those of us who can, let's increase our gifts. Your Secretaries have received no news for this issue. Several men have gone south to winter resorts, one or two have moved into the city from country places and the rest of us are digging in (or out), if in the winter latitudes. Winter started early on Cape Cod. We had a blizzard on the 6th and 7th of December, which left six to eight inches of snow, an unusual condition for the "Narrow Land." Ordinarily we get no snow to amount to anything before February and have good weather into the late fall. This year we have had a cold rainy period, and are hoping this means an early spring. Ducks and geese are still staying in the coves and shallow shores and no ice has formed in the Bay. By the time you read this, the winter will be well along, and the Mid-Winter Alumni meeting will be planned. Attend if you can. Meanwhile we hope you had a Happy Christmas season with children, grandchildren and even great-grandchildren. Happily, we have no deaths to report this month. — FREDERICK A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1904 •

Tempus fugit, and how! No sooner is the 15th of a month past and notes sent in for The Review, when presto! the 15th of the next month has arrived and the notes for another issue are due. It is most discouraging, particularly when this poor Secretary has no store of notes to use. As usual, I am writing these notes six weeks (at least) before you read them. So I shall have to go back and express the hope that you all had a Merry Christmas and a Happy New Year, now so long gone by that you have probably forgotten whether you did or not. You have all probably wondered why there were no notes in the December issue. Because of publication difficulties, The Review Office asked to incorporate part of my December material into the November issue, even though our November notes were very voluminous. The remainder of the material was deleted and thus lost to posterity. Therefore there was nothing for the December issue and that is just what you got.

Now arises the necessity for notes for the February issue, and, I assure you ma-

terial is very scarce. I have received several commendatory letters in the report of the 50th, and all are very favorable, which of course pleases me very much. Here is a note which was deleted, as mentioned above, and though it is now very old, I offer it again. From Dallas, Texas, June 27, 1954, comes the following clipping telling some of us something we already know, but as some of you were not at the 50th I give it for your edification. "Just back from a combination business and pleasure trip is veteran Dallas realtor Lester Russell. After attending to business in Washington at his Realtors Washington Committee, Russell went to Boston to participate in traditional ceremonies honoring members of his Class at M.I.T. at the fiftieth reunion." I think Lester brought with him at the 50th a copy of the Boston *Herald* of June 8, 1904, which gave a full account of our graduation exercises on June 7, 1904.

As I told you some time ago Harry Kendall had a trip to the hospital last fall, but he called on us one day about the middle of December, entirely recovered and looking very fit. We certainly found much about which to talk.

Farnum Rockwood called me one day early in December reporting that he had been somewhat under the weather but had recovered and was feeling good again. He reported a "Bursar" in his shoulder which made it difficult to use his arm without much pain. I always thought a "Bursar" was a fellow who sat in a college office and received the tuition fees from his student body. Perhaps there are two kinds of "Bursar" or possibly Farnum had a "bursa." At any rate, he is all right now.

On November 17, Ed Parker, Dwight Fellows, Gene Russell and I met Gus Munster for lunch at the University Club of Boston. It was really a miniature class reunion and as has been the case at each reunion, we enjoyed ourselves at our utmost and Gus made his famous remark again, "So far, I've had a good time."

George Curtis you will all remember as one of our famous athletes in undergraduate days. Well now that he is "three-score and ten" plus, he keeps it up to some extent. He wrote me that he had played golf at least twice a week all fall. He says, "It is really a good excuse for walking, especially with good companions." That's the way I found it when I considered myself a "player." My rounds were mostly walking, hunting for the ball and doing a lot of talking. But those 19th holes were really something to remember. George also wrote that the "grand parental" athletic influence extends to his three grandsons as he has just purchased ski and skating equipment for them. And while we are speaking of grandsons, Harry Kendall has three who are becoming very good swimmers and will be heard from later, and Harry says "and me a swimmer sinker — almost!"

I had a nice letter from Reg Wentworth at Frederick, Md., where he and his family have been for the past two years and like very much. He was sorry not to make his 50th but says he was too busy, as until August 31 he worked for the contractor on biological warfare laboratories at Camp Detrick. Since then he says, "have loafed, read, smoked, watched

T.V., slept late. Will start job hunting soon." How refreshing to hear from one of our crowd who has not been "retired" and also has not lost his desire to keep on "working." I remember Reg very well when he played either a slide trombone or the baritone horn in the Freshman Band, where I performed on the bass drum, a more musical(?) instrument. I have had letters from Fred Goldthwait, the Secretary of 1905, who says that he started out with us and would have been at our 50th as a member of 1904, if Free Hand Charlie and Getty Lanza had not decorated his record with double FF's. Getty was a tough old bird, as was his "applied mechanics" (however you apply a mechanic). But Free Hand Charlie, I just don't understand flunking his stuff. However, our loss was 1905's gain and Fred has been their secretary for 19 years, and as he says, the only class officer. Look out, Fred, the Alumni Association brass will catch up with you and you will have a full line of officers before you know it.

The reservoir of material for our February notes (if there ever was a reservoir) is pretty well pumped out by now. After having read the foregoing you may very well think "it didn't take too much to exhaust his reservoir." There is a saying the United States inmates of prisons are put to work on rock piles "making little ones out of big ones." We secretaries have quite the opposite kind of task because we have to take very little items and try to make them into something worth reading, or to make something big out of something small. I don't know how well I have succeeded this time. Would some of you drop me a line to tell me what you think? I could make these notes much more interesting if you would only write to me and tell me something about yourselves and what you have been doing.

Very best wishes to you all for everything, and I hope you have a very happy and pleasurable Valentine's Day. Consider this your Valentine from me. — HENRY W. STEVENS, *Secretary*, 1802 Commonwealth Avenue, Boston 15, Mass.

• 1905 •

You found no class notes in the December Review, because nobody bothered to write us any news. The failure to get notes into the January issue was due to a peculiar circumstance. I had prepared the notes several days before the due date and given them to my secretary for transcription. For a week regular demands upon her time prevented transcription with the result that they arrived in Cambridge beyond the deadline, which means that business must have been real good — and it was. I'll not let it happen again for the same reason. With this explanation you will find current news at this point with the January notes, although a bit untimely in some respects, following on.

The freshest bit of news is that Joe Daniels, III, just after being retired as the head of the mining engineering department at the University of Washington, Seattle, is now on his way to Pakistan on an educational mission (F.O.A.). He will be located at Lahore, establishing a mining engineering department at the Punjab College of Engineering and Technology, a two year assignment. His address will be

APO 74, Box K, c/o U.S. Postmaster, San Francisco, Calif. All of which proves that for men with Joe's spirit life begins at 70, also that we shall miss him at our Fiftieth next June.

Along the same line Frank Payne, XIII, writes that he is mighty busy keeping the ship of the Crane Packing Company afloat, and plowing along, that he is in relatively good health and has no idea of retiring. Jim Barlow writes that although having spent a few summers in retirement at his country house in Maine, he has spent the past five winters at Miami helping in the administration of a relative's estate, which with its many involvements sounds like hard work, especially leg work in tracing titles, and so forth.

Remember when you used to write your Secretary your regrets in being unable to attend reunions, 25th, 30th, and so on, on account of sons or daughters graduating from college, or June weddings? Jim Banash'06 writes from W. Los Angeles, Calif., regretting that he cannot be with us next June as a granddaughter is being married next June. If it isn't one generation, it's another. Bill Spalding writes that he and Mrs. Spalding are temporarily living with their daughter at 6344 Natrona Avenue, Norfolk 9, Va. In April these nomads go to their summer home in Canada. They were, at this writing, expecting their tenth grandchild.

Speaking of grandchildren, Mrs. Goldthwait and I went to E. Orange, N.J., last week to inspect our fourth grandson (three in the last 15 months), Jeff Alexander Craigie. He passed inspection and apparently we did also. While there I phoned several '05 men in the immediate vicinity of East Orange. Harry Charlesworth, VI, had just returned from a several weeks trip to his farm in southeastern N.H. He seemed to be in good health and spirit. George Rhodes, VI, having retired seven years ago, shares his time with the families of two daughters in that vicinity; has eight grandchildren. Said that aside from a few minor infirmities was in good health and enjoying retirement. He played a lot of golf until he hurt his back a month ago. Jim Whitmore, II, had a serious nervous breakdown nine years ago, has been in a hospital ever since. Recently broke his hip. Is now at the Essex County Hospital at Cedar Grove, N.J. I talked with Joe Field, VI, of Maplewood. He retired from Bell Laboratories in 1945. Says his condition is "just fair, bothered with diabetes, now have the shingles." Win Taylor, I, said he was in real good health, after an operation last spring, is very active, has 10 grandchildren. Win retired from the Bell Telephone Company in 1947, is now living with his youngest daughter. I tried several times to get Charlie Emerson, XI, on the phone without success.

Mrs. Ray White writes from Summer-ville, S.C., in regard to Ray's condition. She rejoices that he has reached a point where he wants to try to do things. He propels his wheel chair around the house and neighborhood, exults in the company of young children. She hopes that some of his classmates on their way to Florida or return will stop and visit Ray. She gives explicit directions as to finding Summerville, which is not far from Route 52.

If you wish detailed instructions, I'll gladly send them. Ray was Course XIII and had a host of M.I.T. friends during his long residence in Philadelphia.

The year 1955 is perhaps one of the most illustrious years in our lives. In the first place, 270 of us have lived 50 years since the date of graduation. Secondly, it gives these 270 a chance which comes to few people — a chance to attend their 50th reunion. About 125, including wives, have signified their intention of attending. This number will doubtless be increased. 1955 is a very important year for another reason. The Alumni Fund contributions for 1955 will be devoted entirely to a memorial to Dr. Compton, the Karl Taylor Compton Laboratories. Contributions to this cause, as well as those originally earmarked for our Fifty-Year Gift will be included with previous gifts. Robert W. McLean, 249 North Elm Street, West Bridgewater, Mass., Class Agent, is the medium through which our contributions will be cleared. Help Bob help us keep our class banner high.

Those of you who attended our 48th reunion at the Wianno Club, Osterville, Mass., in 1953, would be much interested in a letter from Roy Lovejoy telling of the experience he and Andrea had there sitting out, perhaps sweating out, Hurricane Carol. Sitting right on the edge of the water the hotel took the full brunt of the hurricane. Local police evacuated all but six of the guests at mid-morning, Roy and Andrea remaining, because as Roy said "we considered it safer there than to take a chance of having our heads knocked off with flying glass, roof timber, and so on." Their bath room had three inches of water in it, blown in around the windows, electric service was cut off. Lack of space prevents a full description of their hazardous experience, but we must give them a place on the program of our fiftieth reunion, so that they may describe it in detail. Bob McLean, our active class agent, also had a narrow escape at his summer home on Buzzards Bay. Apparently warnings of the approaching hurricane did not give proper time for preparation for Bob tells of sensing the necessity of escape just in time to gallantly attempt to help a neighbor get her car out and off to higher ground. Before they could get the car started, it was engulfed, the lady taken off in a boat. When Bob tried to go back for his car, it too was doomed and he just was able to "leg it" to adjacent high ground. Peg Ball, whose cruiser *Rabbit Ears* some of you have ridden in, was riding at anchor in Cotuit Harbor as Hurricane Carol came on. Luckily it was the only boat unharmed, one of only two still afloat, the others cast up on shore or sunk. Bill and Peg must live right — and do, in spite of Carol and Edna.

Peg wrote because at the time (Oct. 27) Bill was sailing *Rabbit Ears* to Florida. Expected to pick up Bill, Jr., on Long Island thence South — no further details. Speaking of heading South, the '05 trek seems to be starting. Gil Joslin, XIII, is leaving most any day for the Virginia Inn, Winter Park, Fla. By the time you read this the Barriers will probably be at Naples, Fla., for a couple of months. Others who are going South for the winter, or any part thereof, better give us

your itinerary. To those who may be traveling in Texas in January, and those living there, remember there will be an all-day M.I.T. Southwestern Regional Conference Saturday, January 29, at the Hotel Adolphus.

Jack Flynn, II, in an attempt to help us find an address for Harry N. Atwood, sends us from Buenos Aires, a picture, clipped from a trade paper issue of Higgins Industries, showing beside Andrew Jackson Higgins, Harry N. Atwood, research engineer. That wasn't immediately helpful, because we haven't been able to connect with him through the Higgins Company. Jack adds, however, "I remember Harry as a boy of 16 and he was a keen looking kid then, full of energy and a good sport. You have his record as an automobile racer and a test pilot when aeroplanes came along. He was for a time, as I remember, building small sport planes in Williamsport, Pa. Hope we have Harry with us at the 50th next year." Jack is still rolling out the barrels "tambores, pintados galvanizados," also has a side line or diversion, is "Presidente I.P.S.A.M. S/A Porcelana Americana S/A," which has something to do with bone china and keeps Jack out of mischief.

Those who attended our 45th Reunion at Oyster Harbor in 1950 will be saddened to hear of the death of Mrs. J. Wallace Taylor, which occurred in Cincinnati on July 29, 1954. By her kindly manner and thoughtful consideration she endeared herself to all present. I am sure I can speak for the Class in offering our sincerest sympathy. We have to report the death of Miss Elizabeth J. Strongman, VII, which occurred on June 4, 1954 at South Dartmouth, Mass.

John A. Meggison, VI, whom we have not heard from for several years writes from Galena, Kansas, "It is now five years since I retired from active service for the Empire District Electric Company, at their main generating station in Riverton, Kansas, in June 1949. During the more than 30 years of service as electrician and then electrical engineer, there was a vast variety of service, and increasingly good and pleasant relations between them and myself. They retired me with the title of Senior Engineer (Electrical). The work involved all varieties of switchboard and control work, repairs to motors and generators, rewinding of big and little motors and generators, telephone maintenance, lights and power circuits, current and potential transformers, and so on. Since retiring I have served as a minister traveling in all states, except Nevada, to encourage and instruct Bible classes, attend conventions, lecturing on Bible topics, especially relating to our times. This year I have not traveled much, except to some conventions. In October we serve at a convention at St. Louis, and Grand Rapids (Mich.) and various cities between. The rest of my time is spent locally serving Bible classes in nearby cities. I have been to Boston several times but the trip was too short for any visiting, in each case. The training I received as an engineer at the M.I.T. has been a very great help in the study of the Bible also. Training as to accuracy and reasoning from facts. The education in foreign languages has come in useful, though I have not kept them up

as I should. The previous training in Greek and Latin, especially the Greek, has been a great help. The technical training often enabled me to develop a sixth sense about repairing electrical apparatus, knowing the rules and laws governing their actions."

Bill Spalding, III, who spent considerable of the summer in New England, principally with his brother at Center Conway, N.H. expected to winter at Birmingham, Mich. A. Senior Prince, X, in reporting as a prospect for the 50th reunion asks for information on an old pal, Henry Harding Russell, who started with '05 and was in several of his classes. We have made diligent search without success. Can anyone enlighten us? Harry Gabriel, I, reports "I am hale and hardy, working for Hamilton County (Ohio) and have recently hurdled my 73rd birthday." Speaking of hurdlers Gil Joslin, XIV, tells of seeing and playing billiards with Ralph Emerson, IV, at the Bellevue Club, West Roxbury, Mass., occasionally. Ralph does not get out to class affairs on account of his deafness.

We have these changes of address: Walter Cain, XIV, from Oxford to Whitinsville, Mass., Alden Speare from Newton, Mass., to Collinsville, Conn., Edward J. Poor from New London, N.H., to 709 Idlewyld Drive, Ft. Lauderdale, Fla. This may be a winter address only as Ed had a beautiful summer place in New London. Captain William A. Hall, XIII, from Clearwater, Fla., to Carlisle, Penn. (Mounted Route, Harrisburg Pike), Walter Burns from Cranston, R.I., to 60 Aspinet Drive, Governor Francis Farms, Edgewood 5, R.I. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass. GILBERT S. TOWER, *Assistant Secretary*, 35 North Main St., Cohasset, Mass.

• 1906 •

A local class dinner was held at the M.I.T. Faculty Club on Friday evening December 10 to discuss plans for the 50th celebration of our graduation which, when you read these notes, will be about 16 months away. Notice of the dinner in the form of a letter was sent to all on the class list who are located within 50 miles of Boston. This included 77 classmates. A reply card was enclosed which gave the recipient a chance to show his interest in the 50th Reunion. Twenty-seven classmates returned the cards, ten signifying their intention of attending the dinner, and 11 more indicated they were interested in the 50th. Actually nine of the Class attended the dinner. They were Herbert Ball, Frank Benham, Sherman Chase, Carroll Farwell, George Guernsey, Tom Hinckley, Sherley Newton, Ned Rowe and your Secretary. Two guests were also present, viz., Professor Carle R. Hayward, President, and Eugene H. Russell, Treasurer of the Class of 1904, who staged a very successful 50-year reunion last June and who explained to those present how it was done. Incidentally, your Secretary recommends readers turn to the account of this reunion as included in the November Review. I think any one in our Class will find it interesting reading. Messrs. Hayward and Russell stated the results were obtained by get-

ting in touch with all classmates and by using the columns of *The Review* to constantly remind the classmates of the importance and enjoyment of the affair.

1906 men will be interested to know that the 50-year class is expected to participate in the procession on Commencement Day and after the exercises it is customary for the President of the Institute to entertain the Class at luncheon. This Commencement in 1956 will be Friday, June 8.

Those of us who attended the 45th Reunion at Snow Inn in West Harwich on the Cape in 1951 will recall that we made reservations to return to the Inn for our fiftieth celebration. On this basis the program would call for those attending the President's luncheon to leave in the middle of the afternoon and drive to West Harwich where our stay at the Inn would include from dinner Friday night through the noon meal on the following Sunday or, if desired, remaining at the Inn Sunday night and leaving after breakfast in time to take in the Alumni Day festivities at the Institute on June 11. As has been our custom in the past, ladies would be included in our outing; also, of course, there are special events for ladies on Alumni Day. From now on readers will hear more and more of our fiftieth celebration. It is expected in the early part of next year a letter will be sent to all members of the class outlining the program and starting to get a good representation in June, 1956.

The present class list includes 287 names and it is the opinion of the writer that it would be reasonable to expect a total attendance, including the ladies, of about 100 people at our outing and that we aim for that figure.

Some time at the dinner was devoted to discussing the desirability of a class book giving "thumb-nail" sketches of the living members of the class. As this matter was not definitely settled, the Secretary would be glad to hear from readers in this connection.

Classmates will be interested to know that some of the '06 men have occasion to contact each other relative to engineering and business matters even though widely separated geographically. Carroll Farwell advised that he had had a telephone conversation with Terrell Bartlett on the day of the dinner. Incidentally, Sherman Chase left Miami on the morning of the dinner and flew to Boston arriving in the middle of the afternoon in time to preside at the meeting. Sherman is acting for Metcalf and Eddy in connection with a project for the City of Miami. Carroll Farwell, who is with Fay, Spofford and Thorndike in Boston, advises that his outfit is engineering a section of the new Massachusetts through-way about nine miles east of Sturbridge. George Burpee, who is one of the partners in Cloverdale and Colpitts in New York is devoting a lot of time to advance studies in connection with toll roads and bridges relative to the financing of such projects.

The Secretary sent an invitation to President Coes to attend the dinner but received a postcard replying that he had been away on business and had other commitments which would prevent him from being in Boston on that date.

In connection with the preparation of the new Alumni Register, the Secretary is much interested in obtaining an up-to-date list of the living members of the Class. In regard to this list, the question was raised at the dinner concerning Leon H. Davis, Course I, who has been in the grain and flour business in Boston. It was brought out that Davis had passed away within the last year or two. It is regretted that we have no more information concerning him. Even though he was in business in Boston, he had never indicated any interest in Institute affairs.

Classmates will be sorry to hear that Mrs. Kasson, wife of Charlie Kasson of our Class, passed away on October 22 of this year. Charlie has been residing in Dorchester, Mass. He is with a heating concern in Arlington, acting as consultant, and plans to dispose of his property in Dorchester and take up residence north of Boston where he will be nearer his work.

To return to the subject of the dinner, some mention was made of the Class Alumni Fund and the 50-year gift. Classmates are again reminded that gifts to the Alumni Fund, if so designated, will be also credited to our 50-year gift. Furthermore, please keep in mind that every dollar devoted to this year's Alumni Fund will be matched, dollar for dollar, by an anonymous donor, the total amount subscribed to go to the Karl Compton Memorial. As stated before, these matters are the responsibility of Vice-President and Class Agent Sherman Chase, but no doubt he will not object to this reminder in these notes. — JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington, 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills, 82, Mass.

• 1907 •

Through the courtesy of Jim Barker I received last November a clipping from the Toronto (Canada) *Star Weekly* of December 26, 1953, which in connection with an article entitled, "The Hazards of Map Making," had an excellent picture of our classmate, Kenneth G. Chipman, together with quite a story regarding some of Kenneth's experiences with the Canadian Government Topographical Survey. Kenneth was the first man to join this branch of the government on its establishment in 1908, and he remained there 41 years, eventually becoming chief of topographical surveys before his retirement in 1949. The newspaper article points out that although modern scientific equipment and methods have overcome many of the obstacles encountered in this type of survey work, attacks on the engineers by grizzly bears still remain a problem that has not been mastered.

In telling of an experience that happened to him on September 16, 1912, Kenneth is quoted as follows: "I had climbed 900 feet alone up a mountain near Lake Windermere in British Columbia," he recalled. "No sooner had I sat down to rest than I heard a growl behind me. A grizzly and two cubs had just cleared a clump of poplars. They were not more than 10 or 12 yards away and were coming for me as fast as they could. I had no desire for an encounter, and I also remem-

ber a bushman telling me once that a man can run faster than a bear—downhill. I ran. The bear overtook me in a few yards and I went down. Either she knocked me or I tripped in trying to dodge. Things happened fast for a few seconds, but I distinctly remember her teeth sinking into my left knee and the tearing of the flesh as we struggled. The cubs were close behind her. She let go of me and started down the hill after them. But after only a dozen feet she changed her mind and came back at me. I still had my rifle, a 30-30, and this time I had a chance to use it. I fired at her head and hit her skull, I'm sure, but the bullet glanced. She barely blinked. As she pounced on me, I kicked. That didn't bother her, either, no sir, for she snapped my right ankle in her mouth. Again I was down. Again I had a mental flash: the story of how Dr. Livingstone, the African explorer, saved his life by playing dead when a lion attacked him. So I played dead. What else could I do? The bear let go as suddenly as she grabbed me. A minute later when I dared to flicker an eyelash, she had gone. But it wasn't my possum act that saved me. I thank her cubs for that. They had darted up the hill ahead of us, and she didn't want to lose them."

Knowing he would never reach camp on his own, once his injuries had stiffened, Chipman immediately started the four-mile hike. The bear had broken no bones, but he needed a doctor. It took five days for him to reach one. His mates propped him up in the saddle of a packhorse, and he stuck a pillow under his tender knee. Kenneth's home address is 173 Stewart Street, Ottawa, Ontario, Canada. He has written me that he hopes to attend our 48-year reunion, June 10-12.

As the result of a letter that I wrote to Max A. Greenburg, 23 Chen Boulevard, Tel Aviv, Israel, last October, I received under date of November 21, a letter from him, from which I quote: "My admiration for your devoted interest in the Class of 1907 compels me to respond to your letter promptly. I regret that I cannot be with you at the 48th reunion of our Class, but it is possible, all being well, that I will be with you for the fiftieth. I am not inclined to write about myself, but I have been in engineering work since I finished my schooling at M.I.T. in 1905 until 1950, when I was pensioned by the Associated Electric Industries of England, a part of General Electric Company of the United States. In 1930 I settled here in Tel Aviv, and I covered the Middle East for that company."

"Our children, three sons and a daughter, were all born in Atlantic City, N.J., but received their pre-college education in Tel Aviv. Our oldest son, Theodor Herzel, studied at Cambridge University in England and was an officer in the British Navy during the World War, being a lecturer on secret radar. He now lives in New York City, is married, and is in engineering work. Our second son, Carl, attended the American University at Beyrouth, Syria, was in the United States Army during the war, and is now in chemicals here. Our daughter, Miriam, graduated from Boston University and was an officer in the American Army. She

married a young man from Boston who is an engineer and was a submarine officer in the U.S. Navy in the Pacific. They came here when he was asked by the Government to help in the Israeli War. He was chief of Naval Operations. After the war they settled here with their two fine boys, and he is in contracting work with heavy earth moving equipment. David, our youngest son, who was unfortunately stricken with polio here, went to the United States with his mother for treatment, and they were there for about three years. Fortunately, he came out of it better than most such cases. Although he is no giant, he is not dependent on any support physically. He graduated from Boston University as a lawyer and is now self-supporting. He studied his courses from tape recordings while in the hospital.

"As for the situation here in Israel, so much has been written and discussed that my opinion will not help to clarify the problem. At present, all we can do is to hope that we and the world as a whole will find a solution so that we can live in peace. With the rapid development of knowledge we should make this a better world to live in, and not use recent developed nuclear power for destructive purposes. Perhaps you will come here for a visit. Mrs. Greenburg and I have become experts in showing this community to our friends who come from abroad." (Our world-traveling classmate, Naramore, should take notice of this.)

In December I received from Hud Hastings a page from the *Yale Scientific Magazine* of October, 1954, showing a picture of Hud, with a group of 12 Yale men, at a dinner that was held last May 13 at the Yale Club of New York in honor of our classmate. You will recall that for many years Hud was Chairman of the Department of Industrial Administration at Yale. He retired last July. Over 2,000 industrial engineering Alumni studied under Professor Hastings. A leather-bound volume of personal letters from over 200 of these was presented to Hud at this dinner, together with a silver cigarette box. Both of these gifts were inscribed: "Hudson B. Hastings, with the grateful appreciation of your Yale Alumni in recognition of your courage, loyalty, inspiration and leadership as both teacher and friend."

A brief message received last December 2 from Alfred A. Brooks, Box 488, Anchorage, Alaska, reads as follows: "Retired as superannuated by Worthington. Not ready to stop working, so got a job in the power plant of Chugach Electric Association here as turbine expert. Nice place, pretty country, pleasant co-workers, and no age limit." Alfred had worked as a thermodynamic engineer with Worthington Pump and Machinery Corporation since 1922, and was previously in the turbine research department of General Electric Co. Ernest Altgelt, Route 8, Box 252, San Antonio, Texas, wrote me on December 1, telling of the drought disaster situation in that state. He said that the area where he lives had more rainfall than in the surrounding region so that deer and jackrabbits went to his property and ate the grass to such an extent that he had no grass with which to feed his cattle.

John Frank sent to me last November a copy of a six-page letter that he had sent to the department heads and sales engineers of the company of which he is president, the Ilg Electric Ventilating Company, 2850 North Crawford Avenue, Chicago 41, Ill. This letter tells in most interesting fashion of the trip to Europe that John and his wife and their daughter Patsy took between late September and mid-November of 1954. You would enjoy reading the entire letter but it is too long to include completely in these notes. Come to our class reunion at Oyster Harbors next June 10-12 (only four months from now), and you'll find the letter among other papers in the "exhibit" that I always prepare for our reunions. John and his family flew from New York to Lisbon, Portugal, on September 26, in twelve hours. After a short stay there they flew to Madrid in Spain and remained there for 12 days, visiting art museums and seeing the sights, including a bull fight, and two soccer football games in a stadium seating 125,000 people, Granada, Malaga, Algeciras, Seville, Gibraltar, Barcelona, Palma were other places visited.

John writes: "We did some fancy flying on this trip; Pan American — New York to Lisbon; Iberia — Lisbon to Seville, Seville to Madrid, Madrid to Barcelona, Barcelona to Palma and return; British European Air Ways — Barcelona to London; Pan American — London to Iceland to New York; United — New York to Chicago. We left Barcelona at 3:00 P.M. Friday and were home in Hubbard Woods, Illinois, at 12 o'clock noon on Saturday (There's seven hours time difference between Chicago and Barcelona)." John and Sam Marx, together with Molly Scharff '09, are among those who are definitely planning to attend our reunion in June. About May 1 you'll be receiving from me final notice regarding this event.

The Right Honorable Clarence Decatur Howe, Minister of Trade and Commerce and Minister of Defense Production of the Dominion of Canada, has been awarded the Daniel Guggenheim Medal for 1954. Clarence was cited "for initiating and organizing commercial air routes and services, promoting aeronautical research, development and production of aircraft and engines, and advancing the art of aeronautics." On last December 14 Clarence's wife named and launched the Cunard Line's new 22,000 ton liner *Ivornia* at the Clydebank shipyard of John Brown and Company. — BRYANT NICHOLS, Secretary, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, Assistant Secretary, 18 Summit St., Whitinsville, Mass.

• 1908 •

Gus Weiler addressed The American Philatelic Congress at St. Louis on October 23, on the stamps of the Canal Zone — First Issue on Cover. We hope to be able to give you extracts of the address at a later date. Gus writes: "Last June I attended the 50th reunion at Boston of my class at high school and sure did enjoy it. They wrote me specially to try and come up as I was an early secretary of the organization. I wrote them as follows: 'By the Grace of God, plus 45 units of insulin daily, plus a strict diet, plus 4 high

blood pressure pills, plus a hearing aid, I am able to lead a practically normal life.' And what do you suppose they did; they multigraphed the letter and sent it to all the class as bait for a come-on, and I sure got a razzing when I showed up. So under the same conditions I will try to make the 50th reunion if I live that long. At the moment the doctor cannot find anything wrong with me."

Kurt Vonnegut writes from Nashville, Ind.: "Yes, I have retired, sold my house in Indianapolis and bought one down here. Nashville is a unique little village of about 500 in the hills of Brown County, halfway between Bloomington (Indiana University) and Columbus, Ind., 48 miles south of Indianapolis, a place of pilgrimage, particularly in the late fall when the foliage is gorgeous, noted for its colony of artists, a veritable Athens as far as culture is concerned. I am one of a member of retired youngsters, interesting people for the most part excepting those enthralled by TV. I have a spacious basement equipped for pottery and wood working and intend to do some painting. I shall not be bored as long as I am ambulatory. When the wheelchair enters the picture, then I may have to retire to TV for entertainment. God willing, I shall be with you in 1958. Keep me posted."

Have you sent in your subscription to the Alumni Fund for 1955? As you know the entire 1955 Alumni Fund will be devoted to the Karl Taylor Compton Memorial — the new laboratories for nuclear science — nuclear engineering and electronics. Karl Compton was an honorary member of '08, that being his year at Wooster College, and he never failed to visit the '08 table at the annual Alumni Banquet to talk with the gang. A living memorial of this sort will be a fitting tribute to his many great contributions to the Institute. We are going to miss him.

Harry Lord writes from St. Petersburg, Fla.: "Just received your letter of November 18 and was certainly pleased to hear from you. Reading your letter backwards, I can see that old Father Time has made a bit of a mark on you too — you mention some aluminium combination windows which are going on your second floor 'to make it easier in the future.' Yes, we are Crackers now. We bought a place down here last spring and intend to stay here except for several months in the summer and fall. I sold my house in Lowell to my older son and we moved out on September 30. During the summer we had a little place built in South Chatham and expect to live there June to October. It is an addition to a summer place that our older daughter owns. We plan to spend the summers with her and her three children. It is right on Route 28 opposite the junction of Route 137. A small bow roofed house with a sort of motel addition, which I hope is finished by this time. Drop in sometime and we'll listen to the quail whistling together. Speaking of quail, I'm due, this week, to hunt the Cracker quail for the first time and amongst the big Cracker rattlesnakes. And I'm going to be sort of relieved when we're done for the day. I just dug up an old avocado tree today and planted a couple of young lychee trees. The house we have here is about 20 years old, of frame construction.

We are having lots of fun rebuilding it to our ideas and I'm still spreading lots of paint. It seems that has been my principal occupation since retirement, although we are right out straight all the time at many projects. I'm enjoying retirement very much indeed and I'm glad to say that we are both in very good health. I hope to see Charley Gibbons ('08 miner) very soon. Give my very best regards to all the boys. I hope you all have a very successful series of dinner meetings and I'd like to be with you. Write when you can and take care of yourself. Sincerely, Harry C. Lord."

Jim McGowan wrote us some time ago that he hoped to retire during February, 1953, but that would seem to be "wistful thinking" for Jim is still chairman of the Board of Campbell Soups, and recently has been honored by being appointed by New Jersey Superior Court Judge Vincent S. Hanneman as a trustee of the \$400,000,000 estate of Dr. John T. Dorrance '95, former company president. Jim had to post a \$1,000,000 bond. More recently Jim was named a trustee of the Drexel Institute of Technology at Philadelphia, Pa. These with his other directorates, as you know he is a life member of the M.I.T. Corporation — should keep him busy and far from retirement. He doesn't know what he is missing. — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LINCOLN MAYO, *Treasurer-Assistant Secretary*, 47 Alton Place, Brookline 46, Mass.

• 1909 •

We have received a clipping from the Bridgeport, Conn., *Independent* stating that the Citizen's Committee for the Hoover Report had published a brochure listing the Connecticut officials on the Commission on Organization of the Executive Branch of the Government. Among the names is that of Lockwood Towne, I, who with Mrs. Towne was with us at the Reunion. We quote: "Lockwood J. Towne of Brookfield, chief consultant to the Commission's Task Force on Real Property studying the government's real property holdings and their use with emphasis on such not in the public domain. An engineer he is a graduate of DePauw University and M.I.T. He was formerly vice-president and construction manager of Stone and Webster, Inc. He worked on major construction projects during World War II."

We have also received two pages from the November, 1954, number of a magazine called *Retirement Life* apparently printed in New York State. The pages contain an article by Tom Desmond, I, entitled "Lifelong Learning" in which he describes the program of adult education (for the middle-aged and older persons) which is sponsored and aided by the New York State Education Department. The Department helps local groups initiate community programs for the aged; stimulates business men, church leaders and others to an awareness of the problems of the aged; and exercises leadership in this field. Tom's picture appears on the first page and there are several pictures of classes attending school and of older people engaged in profitable tasks. Tom is Chairman of the New York State Joint

Legislative Committee on Problems of the Aging and the article states that he is a leader in making New York State's Adult Education Program an outstanding success.

In these notes we have already told of the passing of Harold Eaton, VI, who was captain of our freshman football team, and we also stated that he and his wife Frances were "keeping company" when they were both students in Waltham High School. In fact she told us that she always attended the freshman football games and watched Harold play. We visited her when we were attending the A.I.E.E. summer meeting at Atlantic City in June, 1953. She lives in adjacent Margate and Harold was a prominent engineer there, constructing many buildings, roads and bridges. Recently she advised us that she was presenting the Waltham High School Library with a collection of books in memory of Harold. The details have just appeared in the Waltham *News-Tribune* of November 4. Mrs. Eaton has not only donated a collection of 112 books but has also contributed a fund which enables the school to become a member of the Teen Age Readers' Guild in which it takes considerable pride. This is a most fitting memorial. The article also states that Harold "was a member of the Waltham High School Class of 1905 and later became a nationally-known engineer following his graduation from Massachusetts Institute of Technology. Mrs. Eaton herself graduated from Waltham High School in 1906."

We have received a notice from the Alumni Office telling of the death on September 26 of Bob Inglee, II, at Westdale, Mass. When at Tech his home address was Westdale and he prepared for the Institute at the East Bridgewater High School. He was a member of the Mechanical Engineering Society and of the Class Day Committee. Our files show that he spent almost all his life at Westdale. Many of us knew Bob well and remember his quiet and unassuming manner. So far we have not received any information as to his activities and survivors. — CHESTER L. DAVES, *Secretary*, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: HARVEY S. PARDEE, 549 W. Washington Street, Chicago 6, Ill. MAURICE R. SCHARFF, 366 Madison Avenue, New York, N.Y. GEORGE E. WALLIS, Wenham, Mass.

• 1910 •

Sometimes in my endeavor to have a showing in these notes I have to accept rumors as facts and several times I have been in error in interpreting such rumors. Some time ago I wrote that Al Huckins had retired. I was wrong as Al's letter states: "I heard indirectly that I had retired. Fortunately such is not the case and if I continue to feel as well as I do at present my partners are going to have a hard time ever getting rid of me. Living in Rockport is a happy and healthful experience."

Harold Smith of Miami, Fla., writes as follows: "I scan the 1910 notes in each issue of The Review in hopes that there will be some news of my classmates in the 'S' section of the Freshman year. I read about Luke Sawyer in the Wall Street

Journal occasionally but do not have any news about Henry Schleicher, Ed Savage, Max Sherman and others. Of course I cannot complain as I have been very negligent in keeping in touch with my Class. I would like very much to come north early next year and attend the 45th reunion of the Class but Mrs. Smith and I have made tentative arrangements to sail for London from Miami about May 15. If this plan should not materialize I will write you for information as to the time and place of the reunion. I was in Manchester, N.H., this summer when Hurricane Carol arrived in New England. Of course our friends in Miami got quite a kick out of the fact that two hurricanes stayed out in the Atlantic and hit New England while we were there. However, we were in the right spot for Hazel; Miami.

"I was very much interested to read that you have the assignment to restore the tower of the Old North Church. I think that it is fitting that a member of the distinguished Class of 1910 should have this honor. My son-in-law and I were listening to the radio when the television tower of WBZ toppled over. He is the leading partner in the Davison Construction Company and a graduate of the University of Michigan. I remarked to him at the time that I hoped that the tower was not designed by a member of 1910. The big blow of September 21, 1938, showed that "it can happen in New England." I hope that you will keep us informed as to the progress in rebuilding the tower as I think that it is a most interesting project." I hope that his trip to London may be postponed so that we may have the pleasure of his attendance at our 45th Reunion.

I was also pleased to have received the following letter from Herb Reynolds: "I note we haven't had many notes in recent Review issues and expect if some of us would tell you what we are doing we might see more news of our fellow classmates. I am not sure whether or not I wrote you that San Equip Inc., for which I was chief engineer in Syracuse, N.Y., built a new plant in Salt Lake City two years ago and transferred me out here to supervise the erection of the plant and at present I am acting as plant manager. I expect to stay here until I get ready to retire. I have one daughter with her husband and four children here in Salt Lake City. My oldest son is in Los Angeles with two children and my younger son is in Rome, N.Y., with one and a half, so you can see I am getting rather well supplied with grandchildren. In as much as the majority of my family is out here somewhere in the West, I expect to retire here before many more years roll around. I do wish I might make it to our 45th Anniversary next year but at the moment don't see any possibility as Boston is a long way from Salt Lake City." — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston, Mass.

• 1911 •

At this mid-December writing the first list of Fund subscribers has not been issued, but where 1911 is concerned we can say, without fear of contradiction, that if you now look at the class lineup in this

year's Fund drive in the news section of this current issue of *The Technology Review*, you'll find 1911 in a position among the leaders. Particularly this year, when the entire proceeds of the drive — PLUS a matching amount by our new "Mysterious Mr. Smith" — are going towards that new nuclear laboratory, a living memorial to the late Dr. Karl Taylor Compton, than whom there has been no than-whomer in Tech's glorious history! Let's go all-out on this one, mates!

Another Junior Eleven wedding took place at Christ Episcopal Church, Georgetown, D.C., on Saturday afternoon, December 11 (note the lucky date), when Jane Blanchard Kerr was married to Burton Perry Daugherty, Jr. The bride is the daughter of Phil Kerr, II, and Mrs. Kerr of Arlington, Va. This means their three daughters are all married. The bride attended Guilford College and Iowa State Teachers College and was graduated from Ohio State University and the Philadelphia School of Occupational Therapy and until recently has been serving at the Bethesda (Md.) Naval Hospital as occupational therapist. The groom is a lawyer, residing in Lansing, Mich., where the young couple plan to live. He is a captain in the Marine Corps Reserve and served during World War II and the Korean affray. He is currently attorney general of the State of Michigan, attached to the Banking Department. The Kerrs have one son, Bill, who is married and works for Procter and Gamble Company in Baltimore. He is a graduate of Wharton School of Business, University of Pennsylvania, and had two long periods of service in the Navy.

As far back as 1934, Carl Ell, XI, then vice-president of Northeastern University in Boston, had a "dream" that some day N.U. might have an adequate physical education center — and it came true on December 4, 1954 when a new \$1,750,000 building was dedicated. Accepting the keys from Committee co-chairmen Edward Dana and Earl P. Stevenson, President Ell pledged that the new facilities would be used "for the good of all who enter."

Robert G. Dodge, chairman of the Northeastern Corporation, paid special tribute to Carl as an "energetic, able, zealous leader" and credited him, more than any other man, for the rapid, healthy expansion of the college plant — from a student body of 3,826 and assets of \$635,000 in 1931 to today's student body of nearly 14,000 and assets approaching \$15,000,000.

From no land, no plant, Northeastern has grown in two decades to become a great university of ten imposing structures on 22 acres of land in the heart of Boston's Back Bay, extending a quarter of a mile along Huntington Avenue west of Massachusetts Avenue. The Physical Education Center is in the center of this stretch on the very spot where, in 1903, the first world series took place, when the Red Sox triumphed over the Pittsburgh Pirates.

Closest to Huntington Avenue and most imposing of the center's three buildings is the indoor athletic field. Behind this glass-paned structure is the administration building and the gymnasium at the rear of the trio. The athletic cage has a cinder

track of 10.9 laps to the mile and a 200-foot straightaway. The area inside the track will be used for football and baseball practice, field events and R.O.T.C. drill. The main gym, 210 x 110 feet, contains four basket-ball courts and roll-up seats for 2,000 spectators. Another gym is for use by coeds. Below the basketball courts are a rifle range, shower and locker rooms, and space for boxing, wrestling and special exercises.

Three days later, on December 7, President Ell accepted a \$5,000 grant to Northeastern University to provide specialized traffic training for police and court officials, presented by Stanley C. Hope, president of Esso Standard Oil Company on behalf of the Esso Safety Foundation of New York. First training programs will be held in February and March, with courses conducted under the auspices of the Transportation and Traffic Management Institute of the School of Business Administration.

General George Kenney, II, still feels "Russia will attack just as soon as she feels she has sufficient strength to conquer this nation." Speaking at a joint meeting of service clubs in Burlington, Vt., in his capacity as president of the National Arthritis and Rheumatism Foundation of New York, George said: "The United States must build the strongest Air Force in the world to combat this challenge by Russia. We must build a stockpile of H-bombs and be able to deliver them to any part of the world."

Congratulations to Admiral Luis de Florez, II, New York City consulting engineer, on his appointment to the M.I.T. Library Visiting Committee to replace William W. Garth, Jr. '36. Also a tip of the hat to Fred Daniels, VI, chairman of the board of Riley Stoker Corporation, Worcester, Mass., on his reelection as president of the board of trustees of Worcester Academy.

Ralph Holbrook, X, writes from St. John's Road, Ridgefield, Conn.: "Nothing new to report except a change of address. Retired, with my wife gone and the days not long enough to accomplish what I plan, I decided to make my headquarters over here near enough to my married daughter so that she would learn of it if I am up to too much mischief." Also Ralph Vining, III, for years with Revere Copper and Brass, Inc., in Baltimore, Md., is now taking it easy at 311 Berkeley Road, Merion Station, Pa., a Philadelphia suburb.

Christmas cards from classmates are just beginning to arrive, with the Don Stevenses and the George Kenneys and Harry Tisdales leading the van. From Harold Babbitt, XI, his wife, Elma, and their daughter, Ruth Benedict, came a very clever card depicting the pleasures and wonders of the State of Washington, with a legend telling how the three "left Urbana, Ill., in June, settled on Queen Anne Hill in Seattle in August, with retirement from University of Illinois faculty effective September first." Harold had a long, brilliant career at Illinois, topping it with more than a decade as head of the course in sanitary engineering. Thanks a lot, Harold, for your sincere appreciation of my work as Class Secretary, stating that I am "most certainly holding 1911 together." Personally I am very proud of

the fine support classmates give their Class Secretary in keeping 1911 in the forefront. Long may we so continue!

A very modest set of class notes this issue — but there's always the hope that Christmas cards will have messages and on January 11 (there's that magic number again!) much class news should develop at the "Welcome To Dennie" luncheon at the Technology Club of New York, so watch for the March issue. In the meantime: be sure you have given adequately to the Karl Taylor Compton Memorial Alumni Fund. — ORVILLE B. DENISON, Secretary, Chamber of Commerce, Framingham, Mass. JOHN A. HERLIHY, Assistant Secretary, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

Ralph Symonds writes from Marblehead to say that his recent activities are confined to Sherlockian Circles with an evening now and then at one of his clubs. Ralph rates as president of the New England Trawler Equipment Company of Chelsea, Mass., where he has been since 1928. He reports his family is all grown up and he boasts four grandchildren.

A note from John Hargrave reports that as well as selling his tool business in Cincinnati he has also disposed of the plantation where he has spent most of his winters recently. He is now comfortably located in Thomasville, Ga., just across the road from the fourth tee at the Country Club. He is about 50 miles from the Gulf of Mexico and only five hours drive to Clearwater, Fla. He spends his summers near Petoskey, Mich., and spends his spare time visiting grandchildren of which he boasts eight. The Hargraves are leaving late in December on a round the world trip that will keep them traveling until sometime in May.

Oscar Perrine is now mostly retired living at 1749 Orange Street, Riverside, Calif. Oscar has been industrial photographer for many years where he worked for Caterpillar Tractor and Allis Chalmers covering the west coast tractor work, farm, road building, logging, and so forth, which entailed constant traveling. His arthritic knees are making it harder for him to get about and he is looking forward to enjoying the California sunshine in Riverside. He will be glad to see any classmates traveling in that vicinity.

Milton Kahn who has been prominent in Jewish welfare work for many years was elected secretary of the Council of Federation & Welfare Funds at the annual conclave in Atlantic City. The council is the National Association of more than 250 Jewish communities in the United States and Canada.

Roy Glidden who has been for many years assistant chief engineer of the Virginia Department of Highways, was recently installed in New York as president of the American Society of Civil Engineers. Congratulations, Roy, from all of us in heading up this outstanding organization!

Your Secretary wrote Jay Pratt last week to find out something about the soda fountain business, as we have just purchased the United American Soda Fountain Company whose plant is next door to ours here in Watertown. Jay thinks

there may be something in it and has promised to give me the benefit of his experience when we next meet. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. RAYMOND E. WILSON, *Assistant Secretary*, 8 Ogden Avenue, Swarthmore, Pa.

• 1913 •

Your Scribe neglected you last month. Old Father Time is catching up with some of us. This year of 1954 has seen the passing of many of our dearest friends, neighbors, and associates. Again, we repeat that Mabel Mattson's death was a tragedy to the Class of 1913. We shall never forget Bill's help-mate and guide. Our reunions of late years were successful to the *n*th degree, due to Mabel's enthusiasm and foresight. We shall now depend on her daughter Janet to assist Bill in future reunions. To the Mattsons, we send our most heartfelt sympathy and best wishes.

The Boston papers have been bursting with news of our boy, Joseph H. Cohen and his gracious wife, Rose. Joe has just announced his retirement as president of Temple Israel of Brookline, Mass. He has guided his congregation continuously for 13 long years. The membership of the Temple was 800 families in 1942 and today, it has a membership of 1600 families. Joe Cohen has been honored by his associates with a testimonial dinner, a suitable scroll, and an election as an Honorary President. 1913 is proud of you, Joe. Our Class Agent, Larry Hart, keeps us informed of 1913 activities in and around New York. His splendid efforts for the Alumni Fund have not been appreciated by most of us. Our Class ranks third in Percent of Class Contributions; Active Class Roll — 380; Number of Contributions — 129; Percent of Class Contributing — 34 percent. What are we going to do for 1913, Larry, and the Alumni Fund in 1955? Let's make it 50 percent. We have an added incentive, our contributions will swell the Fund, which will be devoted entirely to a memorial to Dr. Compton, the Karl Taylor Compton Laboratories. An anonymous donor has offered to match dollar for dollar this year's Alumni Fund. Well! you sons of 1913, let's go. We have always met a dare, witness M.I.T. 1912 and 1914. Many of you boys remember the genial grocer of Roslindale, Harold M. Rand, 25 Conway Street, Roslindale, Mass. Our boy, Harold, suffered a shock last December 27, 1953. He was seriously ill for sometime as his right side was badly afflicted, together with the entire loss of his speech. Your correspondent and assistant, friend wife, Roz, visited Harold and his wonderful wife at their home last Sunday. He is on the mend. His ever smiling expression has not changed at all. With the aid of a wheelchair, his sense of humor, his love of life, and that flower of womanhood, Esther, he is learning to walk again, and we hope shortly will regain his speech. You of the retired element and you fortunate toilers can brighten Harold's days by writing him or better by visiting him at his home. We enjoyed our visit so much we are going again, soon. Fred Murdock, as you know, a retired tycoon, now resides in Barrington, R.I. He frequently sends a short note

to your scribe — sometimes from Tryon, N.C., or almost any place in the near deep South. What a man! Well, Lester Carlisle Gustin and wife, Winnie, are hibernating in the sunny climate of Florida again this winter. Imagine my surprise to receive two volumes of the Gustin and Carlisle Genealogy one sunny day in November. We asked for news. Gus had it. Lester has certainly a background almost as broad as those shoulders which withstood the battling rams of 1912 and 1914. He surely has been busy. These two volumes are really the Third Edition of the genealogy of the Gustin and allied families. Gus's published treatise covers 1,294 printed pages with many illustrated plates. His talents are varied and far-reaching. After further study and at a later date, your humble servant will endeavor to narrate a summary (brief) of Gus's splendid compilation. Larry Hart has advised that another member of 1913 has passed on to his Maker, William S. Crost, Course VI, 1071 Carroll Street, Brooklyn, N. Y. He departed suddenly September 10. The whole Class offers its sincere sympathy to Mrs. Crost. Fred Murdock and the M.I.T. Alumni Register relays the information that our classmate Colonel Edwin C. Gere moved to Inlet, N.Y., in the spring from California. We now learn that he passed away September 10. We shall miss Ed. To his family goes our heartfelt feelings. Their grief is shared by all of us who were fortunate to be his friends at the Institute.

When you peruse our writings, the New Year 1955 will have appeared. Won't you make it a happier one for me and your starving (news to you) other Classmates. — GEORGE P. CAPEN, *Secretary*, 623 Chapman Street, Canton, Mass.

• 1914 •

A letter from O. C. Hall tells that after 39 years with the Bell Telephone Laboratories he will be retiring on January 31. O. C., still feeling full of vigor, is unwilling to give up to full retirement. He has, therefore, accepted a position as telephone engineer with the United States Instrument Company at Charlottesville, Va. They make sound powered telephones and harmonic ringers for party-line service and are going into extensive telephone equipment manufacturing, selling through the Graybar Electric Company. O. C.'s son, who is a graduate of M.I.T., is working in the Instrument Laboratory at the Institute.

At the December conference of the National Association of Manufacturers in New York, your secretary saw, among others attending, Norman MacLeod, Skip Dawson, and Gardner Derry.

Remember that all contributions to the Alumni Fund will be credited not only to the Karl Taylor Compton Science Laboratory, but also to our Fifty-Year Gift to the Institute. — H. B. RICHMOND, *Secretary*, 275 Massachusetts Avenue, Cambridge 39, Mass. H. A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, N.J.

• 1915 •

Jack Dalton and Max Woythaler did an excellent job in selecting Clive Lacy as chairman of the Special Gifts Com-

mittee for this year's Alumni Fund. With his usual energy and interest Clive appointed a number of captains around the country and from latest reports Clive and his committee have done a good job of collecting. Many thanks to them all.

You will soon be getting the first notices on our Fortieth Reunion at the new Coonamessett Inn at Falmouth, Mass., on Cape Cod, June 10-13. We'll organize at M.I.T. Friday, June 10 and go down to the Cape from Boston. On Monday afternoon, June 13, Al Sampson and Barbara Thomas have arranged for a cocktail party for all classmates, their families and guests at the Algonquin Club, 217 Commonwealth Avenue, Boston. From there we'll go on to the Stein-on-the-Table Alumni Dinner at the Hotel Statler.

About the time you're reading these notes, Hank Marion and Larry Landers will again be putting on a big Class Dinner at The Chemists Club in New York, Friday, January 21. This will help to organize our gang for the coming Fortieth Reunion in June. Stanley Osborne has a sense of humor even during duress and with his check for Class Dues wrote, "Hi, Azel — nearly wrote Hurricane Hazel".

In one of the Plastic Trade Journals is a write-up with pictures of Norton Laboratories, Inc., Lockport, N.Y., where Ben Neal, X, is president. This company was founded back in the 80's and reorganized in 1915. Ben went there in 1916 and has since developed the business to be outstanding in its field. Incidentally Ben looks as young and attractive as ever in the magazine picture. He continues to be one of our most loyal and generous supporters.

Colonel Jim Tobey throws his hat in the grandfather's ring with this letter: "Please accept my entry in the Great Grandfather Sweepstakes. I have just had my seventh, and it was no pain at all. My daughter had her third son in Bangor, Me., on November 7, and my son has four children, two girls and a boy, in Rye, N.Y. I am beginning to feel a bit anile. Mrs. Tobey is in Bangor helping out, and I shall be dashing back there for the holidays, after making a couple of speeches here, and another on the 30th. I made the horrible mistake of delivering an impassioned address on the steps of the Town Hall here (Newtown, Conn.) on U.N. Day last October, and am now paying the penalty for it. We are planning to shove off for West Palm Beach right after Christmas, and will be at 3801 S. Olive Avenue as usual, in case any of the boys are passing through during January and February. In the meantime, come up and see us some time." Jim sent me a reprint of a talk he gave in March, 1954, to Army Medical Graduate School, Washington, D.C. ("Public Health and Religious Freedom," an illuminating presentation typical of Jim's serious research.)

The historical town of Concord, Mass., has recently been expanding with building construction as a popular residential area outside metropolitan Boston. They needed an able man to head up this quickly growing building division and selected our own Whit Brown for the job of Building Commissioner. Whit has been outstanding in his own architectural and building field up there and has given a great deal of

himself to civic and community affairs in the town. However, with his typical 1915 spirit, he rose to this occasion and I am sure will prove the old adage, "if you want a job well done, give it to a busy man." Congratulations to Whit, and best wishes!

It is a pleasure to give you this delightful letter from Abe and Haya Hamburg who spent last year in Italy and Southern Europe. Written from Isola d'Ischia, Italy: "In this letter I can only give you a sketchy description of the five weeks we spent in Italy. I promise to fill in the detail when we return home. We toured by private car and guide over the mountainous roads from Naples to Rome, and then from Rome to Florence, visiting any and all important places in many places. We spent three days in Rome and three in Florence. We've been here on previous visits and this time wanted to concentrate on small cities and towns where there is a great deal more of the old world and many monuments of antiquity. On our return from Florence to Naples we took seacoast road in Pisa and Leghorn and stayed on in Naples three additional days to visit Pompei, Sorrento, the Amalfi drive, and finally the Isle of Capri. For the past 11 days we've been vacationing on the Island of Ischia which is two hours by steamer from Naples. Plan to remain three weeks and then to Marseilles. Then on to French Pyrenees (close to the Spanish border), where we are to attend a Music Festival under direction of Pablo Cassels. World famous artists will participate. We'll head for Paris and then to Havre to sail for home, sweet home. The Island of Ischia is of volcanic origin, and the town of Cassamicida was completely destroyed by volcanic action in 1883. It is the center of hot mineral baths and mud baths and people come from all over the world for cures. Even youth restoration is vaguely promised. There are many orange and lemon groves and vineyards. There are six new hotels in process of completion on this island. My regards to all and every classmate you meet, and last but not least to you and Fran regards from Haya and yours, as ever Abe Hamburg." They've had a wonderful trip and we'll welcome them home.

It is sad to recall the passing of Norman D. Doane on November 14, 1954, at the Asheville Hospital, Charlotte, N.C. He was district sales manager of Permutit Company. Norman was always an active and generous supporter of our Class and M.I.T. affairs. To his family the Class extends sympathy for their loss. We have just heard of the passing of another classmate. Bliss K. Wentworth's death on December 17, 1950, was just reported to the Registry. We have no other word on this.

Support the Alumni Fund and help Max make our 1915 quota. Make your plans now for the Fortieth Reunion at the new Coonamessett Inn. Falmouth, Mass., June 10-13, 1955. Do all this in your effort to "help Azel." — AZEL W. MACK, *Secretary*, 40 St. Paul Street, Brookline 46, Mass.

• 1916 •

All of us know from the wonderful letters which have been received from Chuck Loomis, Harold Dodge, Walt

Binger, Bill Barrett and Steve Brophy that the 1955 Alumni Fund is to be entirely devoted to a memorial to Dr. Compton, the Karl Taylor Compton Laboratories. The aim this year is to get a contribution from every member of the Class. If you haven't given in the past, do so now; if you did contribute last year, up it a bit in 1955. Send your check to the M.I.T. Alumni Fund, Cambridge 39, Mass. We have been informed that an anonymous donor has offered to match dollar for dollar this year's Alumni Fund!

Had a very pretty Christmas Card from Irving McDaniel¹⁷. Said he is keeping busy and "thought I would be in Boston this last fall, but I really do plan to be there in the late spring." Maybe you can arrange your plans so that you can be with us for the reunion on June 14 and 15, and then there are the Alumni Day activities on June 13. We'll hope to see you then, Mac. We were very pleased to get our card from Herb Gilkey on which appeared 16 different snapshots of members of his family, including a couple of himself, looking very fit. He wrote: "Always turn first to Class of '16 news . . . only regret lack of a closer contact with Class and classmates." Maybe you, Herb, will have the opportunity to join us in June. Steve Brophy sent us a very appropriate card announcing his change of address. Steve is now at 470 Park Avenue, New York City.

In reply to a recent request for news sent to Shatswell Ober, he said that he had no story — that he is still teaching the young men at M.I.T. about aerodynamics of airplanes. He also said that he is still trying to keep friends in the airplane industry happy in spite of not being able to supply them with enough graduates.

We had a nice letter from Charles McCarthy (Mac) who as we reported earlier moved to Dallas in July to accept the job of Chairman of the Board of Chance Vought Aircraft. He and Mrs. McCarthy are in the process of trying to get settled in a house they have bought in Dallas. He goes on to say: "As you may recall, Chance Vought Aircraft was one of the original companies which formed United Aircraft Corporation. I resigned from the Navy in 1926 to join Vought which was then a separate company and remained with it until early in 1943 when I was made a vice-president of United Aircraft Corporation and went to work at the head office of United Aircraft in Hartford. Some months ago the management of United Aircraft decided that the time was right for Chance Vought to be set up once again as a separate corporation and at the beginning of 1954 it was changed from a division to a wholly owned subsidiary corporation. At the end of June of this year it was cut loose from United Aircraft and the stockholders of United Aircraft were given stock in the new company. At this time I was elected Chairman of the Board of Chance Vought Aircraft and resigned from United Aircraft." We feel it quite in order to say, along with our congratulations, don't work too hard, Mac. Even though you were the baby of the Class, you just can't get away from the fact that you're not as young as you used to be.

Arvin Page is one of those old reliables

who always answers when you write to him for something to include in the Class Notes. He is still with The Bahnsen Company in Winston-Salem engaged in industrial air conditioning work. He writes: "While we have done work for a great many different industries, the biggest percentage of this work has been in the textile industry. Our jobs cover a very wide range of capacities and that, together with the fact no two jobs are exactly alike, keeps this work from becoming monotonous. At any one time we may be working on one job that merely involves the evaporation of a few pounds of water per hour and on another job that requires the evaporation of tons of water per hour and the use of thousands of tons of refrigeration. We recently completed a job in a cotton mill that required over 2,000 tons of refrigeration and cost well up into seven figures and I mean all of those figures are to the left of the decimal point. At first glance it would appear that textile mill men would not even consider the expenditure of any such sums of money as this for air conditioning, but the amount of power that is used in many departments has been increased so much that conditions are unbearable without such equipment. Horsepower is, of course, much cheaper than man power and in order to conserve on the latter they really have been cramming the horses into the mills.

"I was in one mill last summer where the temperature was 123 degrees F and the superintendent told me that he had seen it go as high as 130 degrees. The machine operators worked for two hours and then took an hour rest period for recuperation. The labor turnover was terrific and the quantity and quality of production was very poor. After the air conditioning was installed and put in operation, the temperature was held at 80 degrees throughout the year, labor turnover practically disappeared and their production improved in a spectacular manner. This, of course, was an extreme case but it does indicate the trend in textiles and the reason why textile mill men everywhere are seriously considering the use of refrigeration. To take up any slack that may develop in my regular job I have two extra-curricular activities that are quite interesting. I am Chairman of the Smoke and Air Pollution Control Board here in Winston-Salem and a member of the North Carolina State Board of Registration for Engineers. In connection with the latter, I was interested to read a letter of recommendation for one of the applicants written by Tom Berrigan. I had never thought of Tom as having unusual literary ability, but man, oh, man, when he puts his heart into it, he certainly can handle the King's English. I suggest that if you ever need a letter of recommendation, that you get Tom to write one for you."

In addition to a nice picture of himself and his wife on a card in which he conveyed wishes to all for a Merry Christmas and a Happy New Year, Joel Connolly sent us a wonderful letter with enough news and information of interest to fill a Class Secretary's needs for a couple of months. We think you will want to read most of his letter, so we will record a portion of it in this issue and continue with it in the next one or two columns. This is

what he writes: "The last few months have seen the arrival of our first grandchildren. Twin girls were born on March 30, 1954, to our daughter, Ruth C. Kvaalen. She and Arne, her husband, write that the twins are doing well. Our son, Joel, Jr., is in Wiesbaden, Germany, now. Both of us are well and happy. Joel hasn't missed a day from work in the 22 months we have been in the Philippines, and while on field trips, he has often traveled in places where it wouldn't be at all difficult to pick up some infection. He has frequently been in highly malarious areas. At other times he has been where 95 per cent of the population suffer from schistosomiasis. When outside of Manila, he sterilizes his drinking water or drinks hot coffee.

"Our present house is near the shore of Manila Bay and there are no buildings between the shore and our compound, which contains four houses. From our windows we can see the water and during rough weather, we hear the waves pounding on the shore. Across the bay are the mountains of Bataan Peninsula, approximately a mile high, their tops usually hidden by clouds in the morning. It is much quieter here than where we used to live, principally because we used to have auto horns disturbing us all day and half the night, since our house was on a street corner. To approach a street intersection in a car without tooting a horn is unthought of. Since most streets have no sidewalks and people walk in the middle of the street, horn blowing is not confined to the street intersections, and one can readily see why there is so much of it.

"Joel recently visited the cordon of soldiers surrounding the communist-led Huks (often termed dissidents) who occupy the upper part of this mountain. He went at the invitation of the Surgeon General of the Armed Forces of the Philippines to check on health conditions among the soldiers, who maintain 24 hours a day, a ring 14 miles in circumference around the mountain to keep the Huks from getting ammunition, medical and surgical supplies and food. The Huks are rebels against the government. They are slowly being conquered, principally by inducing them to surrender by offering them land of their own, in Mindanao where there are vast areas of fertile and unsettled land. They find that a farm, food, home and family are better than malaria, cold and hunger in their mountain fastnesses. Although this is in the tropics, the mountain tops are cold. One of the communist leaders was recently sentenced to 12 years in jail, but the ordinary soldiers are not punished when they surrender.

"Both of us have made trips recently. We went together to the village of Pateros on a 'Welcome Strangers' tour. This is a tour arranged by a club organized to acquaint foreigners with the Philippines. Manila is no more typical of the Philippines than Washington, D.C., is of the U.S. At Pateros, a short distance from Manila, on a Sunday, about 50 foreigners, including Australians, New Zealanders, Indians and Americans, visited a balut (rhymes with galoot) factory. A balut is considered a delicacy. It is a duck's egg incubated at a warm temperature for eighteen days and then hard

boiled. They are peddled all over Manila streets but one seldom, if ever, sees them at any great distance from Manila. The Pasig River, which bisects the city, is lined on both sides near Pateros with duck farms. Here at Pateros, we ate our first baluts. After a lunch out-of-doors of Filipino dishes, with roast suckling pig we were regaled with Filipino dances. We were fortunate in getting some movies of the dancers in their Filipino costumes. There were many dances, including the fire drinking glasses, each containing a lighted wick supported by a cork floating on the oil in the glass. One is on top of her head and one on the back of each hand as she dances. Another dance is the tinikling, which is the oriental version of jumping rope to music, except that there is no rope. Instead, two bamboo poles are rhythmically struck together and separated again in time with the music. The dancers' feet are now between the poles and now outside of them. A mistake by a dancer means a bruised ankle and often a fall. However, there were no mistakes on this occasion." More of this next month.

Again we must close out our column on a sad note in reporting the death of Jimmy Merritt. Classmate Will Wyld notified us of Jim's passing in this letter: "I deeply regret to inform you of the death of our Classmate, Jimmy (James C.) Merritt at his home in Montreal on Sunday, November 7. Jimmy lived in Canada ever since he graduated from Tech, spending about eight years with the Shawinigan Water Power Company and the rest with the Canadian Ohio Brass Company for whom he was Manager of their Montreal District. His death was very sudden, due to a cerebral hemorrhage. Jimmy and I both came from the same town, North Adams, Mass., and we roomed together throughout our college days and I have kept in close touch with him ever since. I had lunch with him in Montreal only about three months ago. We several times discussed our 40th reunion and planned to go to it together. Jimmy and I played together on our class basketball team in our freshman year; he was a star forward and I was a substitute guard. We played in the old St. Botolph Street Gym and I recall we beat the Class of 1915 by two points in a sudden death overtime game. I think Jimmy and I were the only two members of that team who graduated, but I may be wrong in this. Jimmy was only 59 years old when he died which means that he was only 21 years old when he graduated. I should think this would have made him one of the youngest members of our Class, wouldn't you?" There were only three or four who were younger than he at graduation, Will. Thanks for writing; sorry the news had to be bad.

Again, we remind all of you to slow down at least a little now, to avoid an abrupt and final halt to your activities in the too near future. Also, don't look ahead too far to Class reunions. Plan to come to the next one, our 39th, at the Chatham Bars Inn, in Chatham (Cape Cod), Mass., on the Tuesday and Wednesday following Alumni Day in June, 1955. The dates are June 14 and 15 on the Cape, and bring your wife with you for this outing. — RALPH A. FLETCHER, Secretary, P.O. Box 71, West Chelmsford, Mass.

HAROLD F. DODGE, Assistant Secretary, Bell Telephone Laboratories, 463 West Street, New York, N.Y.

• 1918 •

Ted Wright is in the news again, this time due to his appointment as professor of Air Transportation at the Cornell University School of Business and Public Administration. Ted has been vice-president in charge of research at Cornell, president of the Cornell Aeronautical Laboratory in Buffalo, and formerly head of the Civil Aeronautics Administration. Dr. Wright entered aviation in 1918 as an ensign in the Naval Reserve Flying Corps. He joined the Curtiss Aeroplane and Motor Company in 1921; became vice-president of the successor company — Curtiss-Wright Corporation — and the general manager of its airplane division in Buffalo. He is also chairman of the Cornell Committee for Transportation Safety Research; chairman of the executive committee of the Cornell-Guggenheim Aviation Safety Center; a director of the Brookhaven National Laboratory; a trustee of the Sloan-Kettering Institute for Cancer Research; and vice-chairman of the aerodynamics committee of the National Advisory Committee for Aeronautics. During World War II he was a member of the Aircraft Production Board, and director of the Aircraft Resources Control Office, having the major responsibility for the nation's aircraft production program. Ted inaugurated the project engineer system of airplane development and was a leader in evolving the controllable pitch propeller. At M.I.T. he studied Architecture, illustrating all over again the oft observed fact that those of us who achieve distinction often do it far afield from our professional preparation.

Wright rubbed elbows in class with Sam Chamberlain, who also has not designed houses, but who deserves better at our hands than the short paragraph he received here on our last occasion. At hand is a list of his books, now totalling 39 varieties, and selling variously from 50 cents to \$45.00 for a deluxe edition of *Tudor Homes In England*. Beside all this, there are five annual engagement calendars with illustrations depicting various parts of the United States. Sam's range is enormous. He ranges from *Soft Skies in France* by way of *Rockefeller Center* and *Cape Cod*, to *Clementine in The Kitchen*. He even has a book on *Fair Harvard*. The brethren within reach of Boston are having a get-together at the University Club on Saturday, January 8, on which occasion Sam is to give a friendly talk illustrated by some of his superb slides. His fellow Architecture student, Ken Reid, who turned out to be an editor, is also on the program. Next month your Scribe will report on the doings.

One architect who actually has earned his living designing houses, has recently had a letter in the *Boston Herald* with which we heartily concur. Says Bill Wills, "The Boston Art Festival has interested so many thousands of viewers and is being managed so ably in most reports that it would be unfortunate if the aggressive proponents of revolutionary art forms were allowed further to capture the event for their own purposes. We have heard

no assertion, by direct revelation, that their esoteric product has any more significance than the average person thinks it has, and even the rationalizing of professional critics leaves the sceptic with a suspicion that way out there in the *avant-garde* beyond, divorced from any frame of reference whatsoever, anything goes; that though some may achieve an intellectual enthusiasm for the work by thinking they identify moods and inner meanings, most of the adherents are more or less consciously kidding themselves because they know it's smart to be *avant-garde*." As John Ruskin said, the art, literature, music of any period reflects its philosophy. Many of us must be quietly mad. — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey, N.H.

• 1919 •

George McCreery passes along the word that our Class banner has deteriorated to the point where it should no longer be displayed at the Alumni Banquet and other functions. He suggests that enough of our members give a dollar each to purchase "our new auspicious banner of the Class of 1919." Don Kitchin is a member of the Executive Committee of the Alumni Association and also Deputy Chairman of the Alumni Day Committee. Howard McClintic is a term member of the Corporation. Fred Given was in New York on business early in December and phoned your Secretary. He wishes everybody the best and wants to be remembered to the boys. Charley Hyde has transferred back to his home at 2909 Mapleshade Road, Ardmore, Pa. He is working at Frankford Arsenal (U.S. Army). One daughter (18) works at Provident Mutual and the other two are in Haverford high school.

Kuang-Piao Hu is Chairman of Yangtze Wood Products Company, Taipei, Formosa. His company, the largest in Formosa, is presently building landing boats for the U.S. Navy as aid to China. His company's specialty products include prefabricated houses and structures, motor boats, plywood, doors, and so on. He would welcome cooperation with any Tech schoolmate connected with manufacturing or sales of wood products. Another 1919 classmate at Taipei is Dr. Shi-Mou Lee, at present Chairman, Committee on Promotion of Scientific Education, Ministry of Education; address: Hsin Seng Road, South, First Section, Lane 145, No. 7, Taipei. Dick Holmgren is still plugging away as general manager and chief engineer of the San Diego County Water Authority, which has completed a major aqueduct project which assures an additional water supply of 150 million gallons a day for the semi-arid San Diego area. We are sorry to learn that Reg Hunt has joined "Cardiacs Anonymous" and is still more or less on the shelf after several months vacation. He is not allowed to drive a car or sail a boat but just has to be a "gentleman."

From Fred Hewes: "My wife Clair and I continue to enjoy retired life out here in Los Altos, Calif. Ed Pickop, wife Marjorie and daughter Barbara are in the States on a year-long vacation trip after Ed's retirement from the Territorial Department of Public Works, T.H., with

headquarters in Honolulu. We so enjoyed our times together this past summer. We attended the M.I.T. Club of Northern California picnic at Flood Park (near Palo Alto) last summer, attended by 29. An enjoyable day. Best regards." And from other retired classmates:

John Hanson does a little hunting (in S. Dak. recently) and some fishing and traveling. Grant Green has retired from business and moved permanently to his place in the Northern Berkshires, where he will hunt, fish and raise Norwich Terriers. — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York City.

• 1920 •

It is with a heavy heart that I must report the untimely death of Joe Hennessy on November 25 last. Joe was one of our best known and best beloved classmates and the Class sustains a major loss. Joe had been in the contracting business most of his life. He was President of the Pilgrim Boring Company and the Pressure Concrete Company, both of Boston. He served in the Navy in both world wars and during World War II was a lieutenant commander in charge of a Seabee Battalion on Guadalcanal. Joe lived in Brookline and is survived by his widow and a son, Daniel Joseph, Jr. An ardent golfer, he was a long time member of the Commonwealth Country Club. He will be sorely missed on the fairways at Pine Orchard next June.

A welcome letter from Dorothea Brownell Rathbone gives some news of the other three co-eds in our Class. Dorothea says that Constance Peters can be reached by writing her c/o her sister, Mrs. C. A. Hinkle, 41 Edgehill Road, Brookline. Both Dorothea and Flossie have been in touch with Valborg Aschehoug who is associated with the research laboratory of the Norwegian Canning Industry at Stavanger, Norway. Valborg has been urged to come over and attend the reunion and she writes, "To celebrate our 35th anniversary is a tempting thought but not so easy to realize." Dorothea herself has four grandchildren, two girls and two boys, all children of her daughter. She says that the older boy, age five, has started arithmetic with a spectacular bang so she has hopes that she may have an M.I.T. descendant.

I am indebted to Dan Patch of the Class of 1902 for picking up an error in these notes the month before last. Referring to M. S. Sanders of Wytheville, Virginia, we inadvertently said Wytheville, Florida. We mentioned Wytheville was 2500 feet above sea level. This would be difficult to achieve in Florida. At any rate, our apologies to Sanders and we hope the mistake didn't prevent anyone from getting in touch with him if they wanted to move their factory to Wytheville.

Grafton Owens is with the Ciba Products Company, Kimberton, Pa. Dr. John H. Powers is at the Bassett Hospital in Cooperstown, N.Y. George Burt has moved from Chicago to Flossmoor, Ill. Foster Doane is with the Magniflux Corporation in Chicago. Dolly Gray is living in Wilton, Conn., and I am happy to report to you that he looks both youthful

and distinguished. I ran into him in the Grand Central Station the other day. Harold Peebles is in Des Moines, Iowa. Art Radasch may be reached at 3 Windmere Road, Upper Montclair, N.J. M. Saxe heads up the Kesslen Shoe Company, Kennebunk, Maine. Nick Smoley is with the General Electric Lamp Division at Fort Wayne, Ind. Bob Tobin's latest address is 347 Longbrook Avenue, Stratford, Conn.

Classmates who read *Business Week* were most interested and gratified to see two of our prominent members of the Class prominently pictured in a story in the November 6 issue on how John Hancock Mutual Life Insurance Company invests its money. Bob Patterson's handsome profile appeared in a picture of the Bond Committee and Jim Gibson was featured in two of the pictures having to do with the Mortgage Committee. We can't help wondering how Jim persuaded the photographer to touch up his picture to make him look so slim and boyish.

Plans for the big thirty-fifth reunion are progressing satisfactorily under the able leadership of Ed Farrow. Sheldon House, here we come! — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

You have received a brochure on the proposed Karl Taylor Compton Laboratories showing an architect's sketch of the handsome building which the Institute will construct as a fitting memorial to our distinguished president. Your copy of the December issue of the M.I.T. *Newsletter* indicates the location of the memorial near the Dorrance Laboratory and north of the main educational buildings. The latest announcement you have received gives the inspiring news that the anonymous donor, whom we have dubbed "Mr. Amity," has offered to match our total 1955 Alumni Fund gift, dollar for dollar. The entire 1955 alumni contribution is earmarked for the Compton Memorial in order to provide adequate facilities for education in the physical sciences as well as for research at both undergraduate and graduate levels. Dedicated to exploring the vast peacetime potentials of both nuclear science and electronics, the project includes a nuclear reactor to be devoted solely to education and non-secret research. Give your share now.

The Alumni Association has mailed copies of a striking Karsh portrait of Dr. Compton together with a stirring tribute to the man, the teacher, the administrator, the public servant and the statesman who personally influenced the course of history. Additional copies can be obtained from Cambridge.

Last fall's entering class totaled 955, the largest in the Institute's history, and brought the overall enrollment to 5,348. Of this number, thirteen are members of the Junior League of the Class of 1921. Richard F. Jenney '52, son of Mel and Mrs. Jenney of Melrose, Mass., is a graduate student in Course VI. Peter J. Kaufmann, son of Herb and Mrs. Kaufmann of New Rochelle, N.Y., is doing graduate work in Course XV. Robert M. Kendall, son of Jack and Mrs. Kendall of Pasadena, Calif., is a candidate for a doctor's degree

in Course X and the holder of the M.I.T. award of the Pan American Refining Corporation fellowship. Robert M. Lurie '52, son of Mrs. Joseph Lurie and the late Joe Lurie, is also working for his doctorate in Course X and is the holder of a National Science Foundation fellowship award. Seniors in the undergraduate school include Stanley H. Barriger, son of Jack and Mrs. Barriger of Winnetka, Ill.; Evan T. Colton, son of Seymour and Mrs. Colton of Cleveland, Ohio; Myles J. Kiley, son of Al and Mrs. Kiley of Belmont, Mass. In the junior class is Frank T. Flaherty, Jr., son of Frank and Mrs. Flaherty of Swarthmore, Penna. Sophomores are Peter C. Card, son of Tom and Mrs. Card of Fairhaven, Mass.; Lee B. Freese, son of Si and Mrs. Freese of Fort Worth, Tex.; and Malcolm M. Jones, son of Mrs. S. Murray Jones of Waban, Mass., and the late Murray Jones. Entering freshmen are Helen A. Johnson, Course X, daughter of Algot and Mrs. Johnson of Gloucester, Mass., and Jonathan D. Senzer, Course X, son of Sid and Mrs. Senzer of Mamaroneck, N.Y.

Our Class President, Raymond A. St. Laurent, sent in several fine letters covering his meetings with members of the Class during a recent extended business trip. Ray says, in part: "Some 6,000 members of the American Petroleum Institute were holding their meetings in Chicago and I looked up Bill Sherry and had breakfast with him in his suite in the Palmer House. Bill had large stacks of leases and other documents and was involved in signing his full name in septuplicate hour after hour. From Chicago, I went to Tulsa, Oklahoma, where Billy Sherry, Jr., now a grown young man of fine appearance, met me at the hotel and took me to the Sherry home for dinner. Mrs. Sherry had just left for Chicago to join Bill. They can both be proud of the gracious reception and cordial hospitality which was extended by the children. I met Pat, who is the eldest of this unusual family of eight children, Anne, Jane, Teresa, and the youngest, Dick. Margie and Mary are married and both live in St. Louis. Billy, Jr., who was adopted as an honorary member of our Class at our 25th reunion, is a senior at Cascia Hall, following graduation from the Culver Navy course last summer. He is now planning to enter Notre Dame. I have invited him to attend our 35th reunion next year with his dad. That evening, I went to a speaking contest at Monte Cassino School with Billy, Anne and Teresa to hear Jane take part in the competition.

"In Dallas, Texas, I tried to reach Zam Giddens but he was away. In Baytown, Texas, I had a pleasant reunion with Rich Clark, who is one of the top executive group at the Humble Oil refinery. Rich and I went to Boston English High School together and have known each other for more than 41 years. He has a fine home with a most attractive setting on the shore, only a short distance from the refinery. Mary Louise, his charming wife, is a Texan. Their son, Sandy, has finished his service, is married and will graduate from the University of Texas next June in business administration. I also saw James Harrop '20, who is the refinery manager at Baytown.

"In Los Angeles, I saw Jack Kendall, who brought me up to date on his family. Jack, Jr., received his B.S. degree in electrical engineering from Stanford University in 1951 and is a research engineer with the Eitel McCullough Company, electronic tube manufacturers of San Bruno, Calif. A former lieutenant (j.g.) and in the Navy for three years, he is married and has one child. Robert received his bachelor's degree at Stanford in 1952, his master's in 1953 and is in his second year of graduate study at M.I.T., where he expects to obtain his doctorate this year. Jack is Vice-president of Bekins Van Lines, with headquarters in Los Angeles. He has sold his house in Pasadena and bought land for the construction of a new home which he and Marge are planning. He took me on a tour of a number of areas in the vicinity which I have always wanted to visit. We made a date to be together again at the Class reunion in June, 1956."

James L. Entwistle is President and owner of the James L. Entwistle Company of Cranston, R.I., manufacturers of insulation testing equipment and other special electrical products. Walter W. Kittredge is a member of the building engineering staff of the Southern New England Telephone Company, New Haven, Conn., and lives in Cheshire, Conn. Daniel Noce, formerly a major general, has been named a lieutenant general and the Inspector General of the Department of the Army, Fort Myer, Va. Walter S. Ross is a member of the technical staff of the Bell Telephone Laboratories, New York City. Ralph M. Shaw, Jr., President of the Pedrick Tool and Machine Company of Philadelphia, Pa., has broken into print again, this time with a letter to the editor of the *Saturday Evening Post* defending modern youth. A. Royal Wood is Vice-president and Treasurer of the United Illuminating Company, New Haven, Conn. Miles M. Zoller is Vice-president and General Manager of the pigment division of the Eagle Picher Company, Cincinnati, Ohio, and also a director of the company.

Have you returned the questionnaire with your data for the 1955 Alumni Register? This 700-page volume can be ordered from the Alumni Association now at \$6.00 per copy. Space is not available for all the new addresses here but your Secretary will furnish specific addresses on request. Returns have been received this month from Dr. Frederick W. Adams, Gunnar R. Amundsen, Colonel Harold O. Bixby, Brigadier General Merle H. Davis, Robert C. Dolle, Commander Glenn H. Easton, Roderick K. Eskew, Mahlon A. Hartley, Henry R. Hatch, Wilburn H. Henderson, Colonel Robert A. Hill, Thomas J. Homer, Watts S. Humphrey, Karl Jetter, Alexander J. LaPointe, Willis L. MacComb, Andrew I. McKee, Colonel Francis J. Magee, Charles E. Mendenhall, Grant L. Miner, Jr., Paul A. Morgan, Clifton B. Morse, Charles L. Phillips, Larcom Randall, Fairfield E. Raymond, Preston Remington, Chester A. Rimmer, Eugene W. Rudow, John A. Scarlett, Palmer Scott, Ralph M. Shaw, Jr., A. T. Eric Smith, Everett A. Soars, Simeon E. Travis, Jr., and W. Hoyt Young. Drop us a line with your news. — CAROLE A.

CLARKE, Secretary, Federal Telephone and Radio Company, 100 Kingsland Road, Clifton, N.J.

• 1922 •

An examination of the new Directory of the Alumni Association shows that a substantial number of our classmates are still active in alumni affairs. Robert Tonon is a member of the Executive Committee. On other committees of the Association are: Fred Dillon, Boston Luncheon Club; Oscar Horovitz, Friends of the M.I.T. Library; Robert Tonon, Mid-Winter Meeting. Whit Ferguson is a member-at-large of the Alumni Council and the following are Council representatives of M.I.T. Clubs: Parke Appel, Urbana; Robert Brown, Bridgeport; Yardley Chittick, Washington; Warren Ferguson, Atlanta; Oscar Horovitz, Harrisburg; Theodore Miller, Brussels; and Karl Wildes, Schenectady. Among the Alumni representatives on Departmental Visiting Committees are: Edwin Martin, Metallurgy; Fred Koch, Chemical Engineering; Paul Ryan, Harold Boyer and William Huger (the entire Committee), Economics and Social Science; Raymond Rundlett, Humanities. Officers of M.I.T. Clubs are: Claus Thellefsen, Secretary of the M.I.T. Club of Norway; C. Willis Stose, President M.I.T. Club of Philadelphia; John L. Liecny '24, President, M.I.T. Club of Arizona; John S. Williams, President, M.I.T. Club of Virginia; Dwight Vandevate, President, M.I.T. Club of Rochester; C. T. Chien, President, M.I.T. Club of Taiwan, Formosa; Yoshinori Chatani, Vice-President, M.I.T. Association of Japan; Frederick N. Dillon, President, M.I.T. Club of Central Massachusetts. Members of the Educational Council of the Institute are: John L. Liecny, Phoenix; Charles E. Brokaw, Denver; William K. MacMahon and Robert K. Thulman, Washington, D. C.; William E. Huger, Atlanta; Fred C. Koch, Wichita; Willard B. Purinton, Augusta, Maine; Robert H. Brown, Fitchburg; Preston Robinson, Williamstown, Mass.; Everett W. Vilett, Short Hills, N. J.; Whit Ferguson, Buffalo; Thomas S. Craig, Elmira; George Dandrow, William H. Mueser and Raymond C. Rundlett, New York City; Dwight Vandevate, Rochester; Edwin A. Gruppe, Syracuse; Val Friedrich, Hamilton, Ohio; Philip M. Alden and C. Willis Stose, Philadelphia; T. M. Taylor, Kingsport, Tenn.; Horace W. McCurdy, Seattle; Roland H. Becker, Milwaukee; John O. Bower, Bogota, Colombia; Warner Schoop, Zurich, Switzerland.

The American Gas Association at its annual meeting in Atlantic City last October elected F. Marion Banks, President of the Association for the next year. Banks, who is president and general manager of the Southern California Gas Company of Los Angeles, succeeds another classmate, Earl H. Eacker, who, as most of us know, is President of the Boston Consolidated Gas Company. At the meeting retiring President Eacker predicted: "Natural gas will be brought into new territories including the Pacific Northwest. The discovery of great new Canadian gas reserves and the expectation that these reserves will soon be piped to Canadian industrial centers paves the way for a spectacular

development of the Canadian gas industry. Additional supplies will go to areas already receiving the more than 54 billion therms of natural gas being sold annually in the United States." He said further: "Gas has chalked up a string of impressive accomplishments. It now serves a record high of more than 27 million customers and a gain of 31.5 percent in sales by 1957 over 1953 is predicted. Assets of the industry have nearly doubled since World War II to the present total of approximately 14 billion dollars."

Our President, Raymond C. Rundlett, has been named a Regional Sales Manager for *Ladies' Home Journal*. The post has been newly created by Curtis Publishing Company as part of an expanded advertising and sales program. Ray has been with Curtis since 1930. Since 1948 he has been publication manager for the *Journal* in New York City and prior to that he had been publication manager for *Holiday* in New York.

Don Carpenter very generously showed his 'round-the-world movies to an informal group of classmates gathered at the Faculty Club at Sloan Building on December 6. We first had dinner in Charlie Luckman's former private dining-room and then went upstairs to the penthouse for the movies. Don did the talking and Oscar Horovitz ran the projector, which gave us experts at both ends of the operation. The following members of the Class attended along with their wives: Robert H. Brown, Warren T. Ferguson, Parke Appel, Roscoe Sherbrooke, Dewey Godard, Jack Hennessy, Oscar Horovitz, John Goodnow, John Vaupel, Jimmie Duane, Paul Winsor, Walter Kirley, William Riley, Harris McIntyre, and Yardley Chittick. Those coming alone were: Robert Tonon, Dana Sawyer, and William Freeman, their spouses being unavoidably detained at home. Of our two regularly attending bachelors, only Fearing Pratt could make it; Freddie Dillon was stalled in Fitchburg. In addition, we had some special guests, namely, Mrs. Karl T. Compton, Dr. and Mrs. Max F. Milliken, Dean and Mrs. John E. Burchard, Institute Treasurer and Mrs. Joseph Snyder, former Alumni Association President, Horatio L. Bond, William J. Sherry '21.

Word has been received from the Alumni office of the death of Paul J. Thayer in January 1950. No other details are available.

In the interests of conserving space the Review editors have suggested to Class secretaries to omit changes of address unless there is a news item accompanying such change. Accordingly, from now on such address changes will be omitted. Perhaps each classmate, on changing his address, would drop your Secretary a note stating the reason for the change which would then give us news for the notes and justification for the inclusion of the new address. — C. YARDLEY CHITTICK, Secretary, 41 Tremont Street, Boston, Mass.; WHITWORTH FERGUSON, Assistant Secretary, 333 Ellicott Street, Buffalo 3, N. Y.

• 1923 •

A letter from Harold B. Gray, II, General Manager of the Vitreous Steel Products Company at Nappanee, Ind., informs

us that he is retiring at the end of the year and is immediately starting a trip around the world. After leaving Seattle on February 16, he will stop at Yokohama and Kobe, Japan, then head for Singapore. After that he will visit Amsterdam and other way stations. Happy landings, Harold!

Scott V. E. Taylor, II, has offered the Class the originals of a set of 3-D pictures he took at the 30th Reunion and the following Class Day. He claims some of you are potential TV stars. Herbert L. Hayden, II, is custodian of the official class pictures so Scott will turn his masterpieces over to Herb and will look forward to seeing them at the 35th Reunion. Thanks a lot, Scott! In his letter, Herb admits being works manager of the Doyle Works of E. I. duPont De Nemours and Company at Leominster, Mass. He is living in the nearby town of Lancaster and enjoying rural life very much. All three of his children are married so Herb is boasting of six grandchildren. Both he and Mrs. Hayden still play tennis and are now doing ice skating. Careful, boy!

Recent address changes indicate that Walter S. Marder, II, has moved to Monroe, Mich. How 'bout a story, Walter?

Years ago Per K. Frolich, X, was the honored guest and principal speaker at a meeting of the Norway Polytechnic Institute when King Haakom was an interested member of the audience. Now Per is leaving Merck and Company, Inc. to become deputy to the Chief Chemical Officer for Scientific Activities of the Chemical Corps, U. S. Army. He will have major authority and responsibility for administering the Corps' entire research and development program. Henry W. Johnstone, President of the Chemical Division of Merck and Company, Inc. writes, "We regret very much losing Dr. Frolich but at the same time feel it is a great tribute to him that he has been selected for this important post." Congratulations, Per — we are proud of you!

Another author has blossomed forth again, William J. Hennessey, IV, has just completed, *Things for Boys and Girls to Make*, a book recently published by Harper and Brothers. Among his other activities he has been Architectural Editor for American Home and Consultant for House and Garden. In addition, he has written other books on houses and Do It Yourself gadgets. He resides in New York City with his wife and two children. Paul A. Heymans, VIII, President of the M.I.T. Club at Brussels, Belgium, was recently in this country and attended the first Alumni Council Meeting of the year last October. William L. Stewart, Jr., XV, acquired a new son-in-law when his daughter Margaret married William Gravem, November 13, at Pasadena. The bride and groom will live in Stockton. During the Fall, Margaret exhibited her horses at the Cow Palace at San Francisco — that is an honor equivalent to an exhibition at the Madison Square Garden here in New York City.

Lowell L. Holmes, XV, is Director of Management Research Associates at Indianapolis where he has been applying unique methods of helping prospective employers and employees to take a liking to each other. He claims he has a lot of

fun but doesn't make much money. (That isn't the way I hear it!) Recently, he has been speaking before Civic Clubs throughout Indiana on the subject of, "Stay Alive." Well, we are all willing to — for a while yet. His brochures make most interesting reading. A notice received from the Alumni Register indicates that Maxwell B. Donald, X-A, has achieved the rank of Professor. He is at the University College in London, England.

Had lunch the other day with Percy P. Pratt, XV, who is with General Foods here in White Plains. Percy travels all over the world, making economic surveys for G.F. A few weeks ago he was in Brazil, shortly after the turn of the year he expects to be in Venezuela. His daughter graduates this year from Centenary Junior College, Hackettstown, N. J.

Richard Kleinberger, VI, is consulting engineer here in White Plains. He is building a new house and completing a new final stage for his ham radio transmitter. He has also worked out a bit of graft with the local electronics shop. Dick gets a cut for every high pass filter the shop sells for the neighbors' TV sets. Now why couldn't I think up a racket like that? Your Scribe was elected President of the local Chamber of Commerce... serves him right — he should have kept his big mouth shut! — HOWARD F. RUSSELL, Secretary, Improved Risk Mutuals, 15 No. Broadway, White Plains, N. Y. WENTWORTH T. HOWLAND, Asst. Secy., 1771 Washington Street, Auburndale 66, Mass.

• 1924 •

Wish I could tell you about all the dope that arrived with Christmas cards, but these notes are written so far in advance of Christmas they haven't really started arriving yet. Of course Pret's Christmas letter to us all is the greeting to top (not end, I hope) all greetings. Most of us didn't realize that our new president had the soul of a poet. You can include Pret in that statement, too. McCord, Ogden Nash and especially Frank Sullivan had best look to their laurels. Of course they might advise him to stick to his ginger ale! One card did come in though, that shows this poetry business is catching. Is that good? Looks like Ed Winger may be striking for the job of Associate Poet Laureate of the Class. Here it is: "Before Pret the poet, and Chick the drawer/ The whole class should stand in awe-r/ To them we owe everlasting thanks/ For keeping so many of us in ranks." It's obvious that Ed has been hearing all about this business of poetic license.

A note from Johnny Henninger repeats what so many others have said about our 30th reunion. He vows the Henningers won't miss any more from here in "as long as we are able." We'll expect to see them at our 60th. And while we have no clear records on class multiple-grandparenthood the Henningers are certainly in the running for some sort of a medal with seven grandchildren so far.

Latest from the Frank O'Neils placed them in Heidelberg where they lunched at the old Schloss and saw the famed 55M gallon wine tun. Assume they got home in time to celebrate Christmas there rather

than at the old wine tun. Charlie MacBrayne, another Illini, gets around a bit too, with four of his plants in three states. Charlie is V.P. of Matthiessen-Hegeler Zinc. With Mrs. MacBrayne he did Florida and Sea Island this year, had Ray Meade for a guide. Ray is still working for the State of Alabama and planning to retire in a year or two. Charlie has also seen a bit of Silvio Massari recently since Sil became head of the Hensel and Elcesk (if that's not the right spelling blame Charlie's penmanship) Foundry in Chicago. Sil's daughter, Marilyn, graduated from Mt. Holyoke in June, was married during the summer.

Yesterday (as this is written) your Secretary saw the student Ilfelds off on the train, going home to Taos for the holidays. While Max is brushing up on a bit of architecture at the Institute Bertha is going in for oil painting. They're both learning a lot about the modern trend. The decor of northern New Mexico is due for a change when they go back for good. Among the visitors to the Institute this fall, Bill Rosenwald, showing his thirteen-year-old daughter Nina what the old school looks like. He hardly recognized it himself. Also a couple of ex-'24 men, refugees in adjacent classes. Karl Van Tassel '25 showed up a couple of times. He's running GE's Knolls Lab in Schenectady. That's the big sphere that has been so widely publicized. And Bill Rivers'26 stopped by with Mrs. Rivers, sort of a way stop in changing locations from Calcutta to Nairobi. Bill has been with Standard Vacuum in India for years, now is being shifted to Africa. With retirement coming up in a couple of years they are looking forward to returning to the States, roaming around in a trailer until they locate a likely spot, then settling down.

Did you see that recent issue of *Fortune* in which Ed Hanly appeared? Seems that Ed is not satisfied with being a steel mogul, or a Harvard alumni president, nor even a chest aide. Now he's become an angel! Broadway variety, that is. Gardner MacPherson, in Paris for the last few years with the State Department, is now back in Washington. Again the sad duty of reporting two deaths. In October George W. Emerson, Jr., died in Wellesley. And on December 2 James R. Hancock passed away in Jeffersonville, Ind. No details available in either case.

So much for now. Don't forget that your Fund contributions this year to the Compton Laboratories do double duty, what with "Mr. Anonymous" matching them dollar for dollar. And if you work for G.E., with that same offer they have made, there's a factor of three. This is a year when your gift dollars really count big! — HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

By the time you read this, there will still be an opportunity to make your reservations for the 30th Reunion celebration. It seems time to let everyone know of the committee organization which is taking care of the planning for the various activities next June. Ave Stanton and your Secretary are concerned with the publicity, mailings, and so on, while Sam Caldwell has agreed to serve as the Reunion

Treasurer. The Hospitality and Reception will be in the able hands of Mac Levine and Joe Russell while the dinner and entertainment on Friday evening, June 10, will be co-chaired by Jim Howard and Wally Squire. For our Symposium and Luncheon with the Class of 1930 on Saturday morning, Fred Greer is working with Allen Latham'30. For those who want to make plans for Saturday afternoon, Bill Arnold will have a complete list of things for you to do. The banquet and entertainment on Saturday evening, we have entrusted to Sam Glaser and Walter Westland, while the entire Sunday program, including the outing and Lobster Bake will be under the chairmanship of Henry McKenna, with assistance from his committee members, Greg Gregory, Dave Goldman and Bob Hodson. Bob Ashworth and Chet Trask will have interesting door prizes mementoes while Ed Kussmaul will again provide us with a Reunion Report. If you are still delaying sending in your reservations, mail it today.

Most of our classmates have kept out of the news during the past month; at least the clipping service has provided us with only one item. This, from the Boston Evening *Globe*, indicates that Mrs. Joseph C. Aub, IV, of Belmont, has been elected president of the Board of Directors of the Window Shop, Inc., in Cambridge. She has served as treasurer of this organization for the past 12 years. The Window Shop was founded in 1939 to help people forced to leave Europe find employment and security in this country as new Americans. A group of Cambridge women backed the new enterprise to give immediate aid to displaced persons. It now is housed as a restaurant and shop in the old "Village Blacksmith Shop." The pension plan for employees, most of them new Americans, was inaugurated this past summer. Profits go to aid newcomers and native born Americans in finding employment, retraining and education, a most worthy undertaking.

Mrs. Aub has a degree from Bryn Mawr as well as from the Institute and is a trustee of the Cambridge School in Weston and a former president of the Bryn Mawr Club of Boston and a trustee of the Shady Hill School.

Among the Reunion returns, comes a letter from Mrs. Robert R. Crosby, stating that her husband, a graduate of Course IV died on August 12, 1952. Bob had two children, Anna, born January 16, 1928 — Wellesley 1950, now Mrs. William H. Morris of Bryn Mawr, Pa., and Eleanor, born January 19, 1939, a junior at St. Margaret's School in Waterbury, Conn. — F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge, Mass.

• 1926 •

We have run into one of those months where there isn't a single letter from a classmate from which to quote and as you might expect the clipping services fell flat on their faces, too. This means that some of you will have to come through with a little bit of some kind of news or put up with whatever I care to write about for the next six months. Yesterday noon I had the shortest visit ever from any classmate who stopped around at Pigeon Cove but it was explainable. Stewart Perry ap-

peared in his bright red Ford convertible with a fancy radio antenna sticking up from the center of its trunk cover (he is an ardent "ham") and announced that he merely wanted to see the locale from whence came the class notes. He had the town engineer in tow so I presume the visit was on business since Stew recently sold the town a Worthington pump. Stew looked us over, seemed satisfied and zoomed out the drive. The explanation for his rush was that his son was due back from Korea and he had to get back to Boston to meet him, certainly a most worthy reason for his short stop. He promised to return, however.

I stopped off at Old Greenwich, Conn., recently to see Ben Richardson who is an engineer with Electrolux Corporation. I was greatly surprised when Ben walked into the lobby to see that his weight was back to what it was at our 15th — learned that he had been ill some months ago and that a successful operation had also successfully streamlined his figure. Ben took me through the Electrolux plant which makes nothing but vacuum cleaners and I was really impressed. Since I practically never get into anything other than a chemical or a rubber plant, it was novel to visit Electrolux. The place does everything automatically that is possible and it was weird to see thousands of stock bins hanging from a ceiling track, moving constantly and picking up parts all the way. Ben explained that their parts inventory was all up there on the ceiling and therefore it was given a little extra track than absolutely necessary but it keeps constantly moving. In another part of the plant the assembly line for the vacuum cleaners was also an overhead track and this one was three stories high in a high building with the tracks crisscrossing at different levels making an interesting pattern in design. Having been connected with sales for 25 years I could not refrain from thinking what an efficient sales organization they must have to get rid of so many vacuum cleaners coming off a production line like this day after day. I came away firmly convinced that the next vacuum cleaner we buy will have to be one of Ben's manufacture.

Speaking of Ben's involuntary loss of weight, I have just been looking over some photographs taken at our 20th reunion at Wianno and, golly, have we as a Class put on the pounds in a few years. I'm not mentioning any names but exclude a few Ray Mancha's and Jack Larkin's and it's a pretty general trend. A photograph in the October 3, Portland, Ore., newspaper, however, indicates that Bill Rooney is still maintaining his youthful appearance (or could it be an old photo, Bill?). It shows Bill looking as he did as an undergraduate and with plenty of coal black hair. The occasion of the photo is the appointment of Bill as manager of Ebasco Services, Inc., with offices in the Equitable Building at Portland. Congratulations, Bill!

The other day while looking for a table in Schrafft's Restaurant in our building, I saw a hand waving frantically. I had been looking right over the top of Bill Meehan's head. Bill's office is right around the corner but for some reason the only times we see one another is like this in the res-

taurant. Bill is Director of Operations for the A and P in this northeast area and always comes into the restaurant with several of his associates. Before long, Bill and Joe Levis will have to be thinking about the athletic activities for our 30th reunion. They have been the committee for this activity at every reunion I can remember and do a wonderful job.

Incidentally we have been kicking the reunion idea around a bit and plans will have to be worked out before long. It's only a year from June. As you know, Cedric Valentine is to be chairman of our Thirtieth and as yet we haven't settled on a place. We had hoped to be at the Oyster Harbors Club but recently were advised that the club cannot accommodate us. A couple of classes have recently held very successful reunions on campus but we have had such good times at resort hotels in the past, there has been some reluctance to change the pattern. In discussing the 30th recently with Val it seemed to us that a questionnaire to the Class asking what kind of reunion you people would like would be in order. I think Val plans to work up such a questionnaire in the near future so if you have any thoughts that might be included why not send them along and I'll give them to Val. There should be some routine way to end these notes like one ends a letter. I find it easier to keep on writing than to wind them up with a hackneyed cheerio but I guess that's it till March. — GEORGE WARREN SMITH, *Secretary*, c/o E. I. duPont de Nemours and Company, Inc., 140 Federal Street, Room 325, Boston, Mass.

• 1927 •

At the Sixth Annual Convention of the Audio Engineering Society on October 14, 1954, C. J. LeBel presented a paper entitled "An Experimental Study of Distortion." He is chief engineer for the Audio Instrument Company, Inc., of N.Y. and secretary of the Audio Engineering Society. Glenn D. Jackson, Jr., has become vice-president and general manager of the newly-formed Nashua Finishing Company, Nashua, N.H., headed by S. L. Liebowitz, president of Coleport Fabrics, Inc. The company will do textile printing, dyeing and finishing. Operation of the new setup is expected by next April.

A recent letter from H. M. Houghton tells us that he was transferred from Calgary, Alberta, to Tulsa, Okla., in July, 1952. In February of 1953 he resigned from Amerada and returned to Calgary, Alberta, where he can be reached at The Geophysical Prospecting Company, Canada Limited, 411 Sixth Avenue W., Calgary, Alberta. It is with deep sorrow that we report the death of Ewan R. Hayes in Evanston, Ill., on July 19, and Manuel Liwanag on December 19, 1953 in Zamboanga, P.I. — JOSEPH S. HARRIS, *Secretary*, Shell Oil Company, Aviation Department, 50 West 50th Street, New York 20, N.Y.

• 1928 •

On a Wednesday in November Arnold A. Archibald, Vice-president of Jones and Laughlin Steel Company, stopped in for a visit with Ralph Joep. Archie still makes his headquarters in Pittsburgh, although he travels all over the country on his as-

signment as vice-president in charge of Engineering and Plant. During a stay in Columbus, Ohio, Archie had lunch with Howard R. Batchelder. Batchelder is now research associate with Battelle Memorial Institute. Before going to Battelle he was with U.S. Bureau of Mines in Louisiana, Missouri, and before that with Standard Oil of New Jersey. The Batchelders have two daughters, one of whom is married.

Our classmate, Jack Chamberlain, professionally known as "John W. Chamberlain, M.D.," has been appointed Surgeon-in-Chief for pediatric surgery by the Trustees of the Boston City Hospital and has been promoted to assistant professor of surgery in the School of Medicine for 1954-1955 by the President and Board of Trustees of Boston University. In addition to these new honors, Jack continues to help M.I.T. by serving as associate director of the Medical Department.

An October 1954 issue of the Massachusetts Memorial Hospitals *News* contained the following note: "With regret the hospital said goodbye on October 1 to Mr. Allen S. Richmond as Director of Public Relations. Mr. Richmond has resigned his post to take on the job of assistant to the Dean at Harvard School of Public Health." Our best wishes, Al, for all success in your new position! — GEORGE I. CHATFIELD, *Secretary*, 49 Eton Road, Larchmont, N.Y. WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, West Cambridge, Mass.

• 1932 •

While I have some interesting news items on some of our classmates, I can't help but devote the whole column this time to what for me was a most stimulating and inspirational account of the accomplishment of John Hagen in setting up his own "private enterprise," making plastic toys in Mattapoisett, Mass. I hope all of you who see this column get as much of a kick out of it as I did. The article is from the Taunton, Mass., *Gazette* for October 11, 1954: "The grass is greener in your own back yard." This is the opinion of John A. Hagen of Mattapoisett, who said today that there is nothing that the small businessman can't do in New England. To back up this assertion, Hagen pointed to his own experience, which includes turning a vinyl plastic toy business from a garage experiment into an operation occupying a new \$20,000 building where a maximum of some 40 new employees began to manufacture 10,000 toys a day early this month.

Operating the one and only manufacturing concern in the small Bay State town at the entrance to Cape Cod, Hagen predicts a net sales figure of \$100,000 in 1954 from a 1951 figure of \$15,000. The new building, covering some 5,000 feet of floor space, was designed and built by Hagen, an M.I.T. civil engineering graduate who worked his way through college. Complete with a gable and shutters to fit into the scenic surrounding of the small town, the building now is being landscaped to look like a home. "The idea that you have to operate a new business where there is a lot of commercial activity is sheer nonsense," said Hagen. "The country atmosphere is equally and perhaps more stimulating to new enterprises because of

ready availability of labor, a good transportation system, and the all important human factor of escaping undue pressures of the city," he said. "And it all goes back to the tried and true statement that 'Massachusetts is a wonderful place to live and to work,'" Hagen added.

In reviewing the progressive activities of the dynamic young engineer who is a firm believer in "active management," Commissioner Richard Preston, Head of the Massachusetts Department of Commerce, said that the Hagen Company is typical of the successful small business which contributes so much to the overall economy of the State. How did this venture have its beginning? Following some 15 years of experience with a New Jersey rubber latex firm, Hagen decided to experiment with the idea of using vinyl plastic to make "floating" or "hollow" squeeze toys. Hagen sat down in his garage and proceeded to develop the machinery where a vinyl plastic solution (consisting of resin, plasticizer, stabilizer, and a color) is poured into a mold, rotated in heat, and finally removed as a hollow toy. That was four years ago. According to Hagen, his company is the only Massachusetts firm to use this "rotation method."

At this point, Mrs. Hagen interrupted to explain that the features and details are hand-painted on each toy by the women working in the shop. When Mrs. Hagen isn't selling the toys locally, she works in the shop along with the women. It was suggested that she might have had art school training. "Oh, no," she laughed, "practice makes perfect!" Who designs the toys? Hagen, of course. When Commissioner Preston asked where the talented businessman gets his ideas, Hagen said that he designs "something I would like to have if I were a kid." Mrs. Hagen and the family's close friends act as judges; if their initial reaction to the proposed toy is one of approval, the item is placed on the market. Markets for the Massachusetts product include approximately 2,000 department and chain stores throughout the country. When the toys first were introduced, the response was so remarkable that the company was forced to hire sales representatives in California and Rhode Island. "We must admit, though," Hagen explained, "that it really takes faith and courage to start out with something as new as ours."

Commenting from the woman's point of view, Mrs. Hagen said that the quaint Massachusetts town is a delightful place in which to live. A short walk brings her teen-age son down the beach where he can swim and sail. The weather, believes Mrs. Hagen, is "perfect" in Mattapoisett; neither too warm nor too cold. "Business is fun," concluded Hagen. "The whole point is that you don't have to be a General Motors to make a good living in Massachusetts. When a potential industrialist seeks a location, the points he considers are labor availability, transportation facilities, and proximity to markets. And you don't have to go outside Massachusetts to find all this." — ROBERT B. SEMPLE, *Secretary*, Box 111, Wyandotte, Mich. *Assistant Secretaries*: WILLIAM H. BARKER, 45 Meredith Drive, Cranston, R.I. ROLF ELIASSEN, Room 1-138, M.I.T., Cambridge 39, Mass.

Warmest congratulations and best wishes to Hank Backenstoss and his wife, the former Nicole Humbert of Paris. In case you hadn't heard, Hank, who had met Nicole in that city in 1953, went to France twice last summer and during the second visit they were married in Paris—also twice. A civil ceremony on September 24 was followed on the next day by a wedding performed by an Army chaplain. What with visa formalities, it wasn't until December 3 that Mrs. Backenstoss could get to this country to join Hank. They are living in Cambridge and our esteemed class president is introducing his wife to life in the U.S.A.

As noted last month, there now follows Bob (Robert C.) Becker's letter to Carl Wilson written last March in response to the twentieth reunion announcement. Bob's friends will note his plans for a vacation from mining in Chile during 1955 in the course of which he hopes to see as many classmates as he can. "Your opening salvo concerning our 20th class reunion arrived here four weeks ago, and while there isn't the remotest possibility of my being able to attend it, I should appreciate your keeping me on the mailing list so that I may know not only the plans as they progress but of the reunion itself when it takes place in June. My check . . . is enclosed.

"Even though my name still appears at the end of our class notes in *The Technology Review* as Assistant Secretary, you probably know that I have not contributed a single word to those notes since about 1938. The reason (and not an alibi) is simple enough: I've been too far away and have lost contact with all of the bunch I once knew so well. However, that 'comments which may be of interest' part of your questionnaire looked like a golden opportunity to bring those of you who may be interested up to date on my activities over the past 20 years. Or, more accurately, over the past 15 years, inasmuch as I did attend our class reunion in 1939 and must have spoken of what I had been doing up to that time.

"After leaving Ecuador in April, 1939, where I held a job as shift boss in a gold mine, Grace and I decided to wait for an opening with the Chile Exploration Company, an outfit I'd been trying to join ever since finishing school. The wait was a long one, but in November we sailed for Chile and I started as a junior engineer in the mine. A year later I was transferred to the Operating Division and began a long apprenticeship in railroading and shovel operations. In the morning of October 4, 1942, I was named Assistant General Operating Foreman; that same afternoon my orders for reporting to active duty arrived. We flew home on January 10, 1943, Grace, our five-month-old daughter Madeleine (now as then called Punky) and I, but not before the Company, our military attaché and our embassy tried to make me believe I was so vital in the copper industry as to be irreplaceable, and that I'd spend the war years holding down a desk.

"I fooled them all! Although my contribution toward winning the war was neither more nor less than that of the other eleven millions of Americans in uni-

form and more millions who helped at home, none of my three years in the Army was spent behind a desk. Instead, I joined a Canadian-American unit, became a paratrooper, ski trooper and commando; participated in two rubber boat landings at midnight prior to dawn invasions; lost a thumb at Casino and suffered a ruptured eardrum in southern France; took the long way 'round after the breakthrough at Anzio but got to Rome before any other Allied troops; was on the Czech border with Patton's 3rd Army on V-E Day; and spent four months in Norway rounding up and processing German troops before coming home at the end of October, 1945.

"We got back to Chuquicamata in January, 1946, and except for three- to four-month trips to the States in 1949 and 1952, we've been here ever since. Our old job was waiting for us in 1946, but two months later I became General Operating Foreman; then in 1950 I was named chief mine engineer; and last April I was appointed assistant mine superintendent.

"Let me tell you something of Chuqui (as it is known throughout the mining world). Chuqui is an open pit copper mine whose reserves are the largest in the world. It is surpassed only by Kennecott Copper's Bingham mine in copper production but (Frank Milliken take note—Frank being a vice-president of that organization whose Braden mine operates some 900 miles south of Chuqui) will still be a major producer of copper when the then-present generation will only know Bingham through its history books. Chuqui lies at the foothills of the Cordillera Real of the Andes Mountains at an elevation of 9,500 feet and is 150 miles northeast of the port of Antofagasta. Because it is in the Atacama desert (not white sand like parts of the Sahara, but true desert nevertheless) rainfall is practically non-existent and the only visible vegetation is found in our hard-worked-for gardens. Daytime temperatures average 80 degrees in summer and 70 degrees in winter; night temperatures average 44 degrees in summer and 34 degrees in winter. Relative humidity is about 30 per cent, with highs of 55 per cent and lows of 4 per cent.

"With a population of 29,000, it is probably one of the largest mining camps in existence. The majority of the 190 foreign families is American, the others being English, Irish, Scotch, Canadian, Swedish, German, Polish and Yugoslav. Our housing is excellent and is rent-free. Parties are given frequently both at home and at a club that boasts a restaurant, bar, swimming pool and six bowling alleys. Although our nine-hole golf course, with not a single blade of grass to commend it and with greens made of sand mixed with oil, can't compare with any at home, it is played by almost everyone; and together with tennis and softball, it provides more than enough relaxation and exertion for even the hardest among us. For those who want professional entertainment there are two movie houses, while for the others as well as some of the former, we have a local theater group and a glee club that put on two plays and as many concerts each year.

"I'll admit that all of these things are

commonplace at home, and perhaps you've come to the conclusion that we enjoy our isolation because of high salaries. As for being isolated, I for one don't think we are. Television no, but radio that brings me world happenings and even re-broadcasts of major league baseball games, yes. And we read the 11 magazines and one New York Sunday newspaper, to which we subscribe, from cover to cover. As for salaries, they are on a par with those paid at home for similar positions, but the slightly lower cost of living and the free housing (and somewhat lower Chilean income taxes) allow us to save considerably more than we could at home. And then, too, if those of us who remain here year after year didn't like the work and the living conditions, we could quit tomorrow. I don't because I want to stay in mining and because I find that Chuqui is still among the best mining camps to be found anywhere.

"The mine is a little more than two miles long and three-quarters of a mile wide, and from top to bottom the 23 benches span a vertical height of 980 feet. Twenty churn drills drill 9 to 12 inch holes which, when loaded with dynamite and shot, provide the material which is loaded out by 14 power shovels into 70-ton cars and 30-ton trucks for treatment or for disposal as waste. A fleet of 27 85-ton locomotives do the hauling while tractors and cranes make roadbed and lay track. The operation is a 24-hour one, and while in normal times the average mine production is about 100,000 tons of material removed daily, the present world copper situation (plus the very special Chilean situation, which began a year ago when the price of copper was decontrolled and Chile refused to sell at less than the 36¢ cents it had been getting before that) has resulted in a production cutback of 30 per cent.

"So much for the past 20 years. Incidentally, Carl, I've been especially busy lately trying to dispose of some four million dollars' worth of construction equipment left over after the recent completion of our new 'Sulphide Plant' as well as trying to do my share in running the mine, so that I only got around to answering your first letter at noon today. Your letter of March 5 arrived this afternoon and prompted me to sit down tonight in an attempt to finish this reply. Much as I'd like to be with you at Portsmouth, it just can't be done. But I'd like to ask one favor: if your plans for a class history pan out, could addresses be included? For our trip home next year we plan to buy a car in New Orleans and make the grand tour, with 42 states included in the itinerary; and we hope to be able to stop off along the way to see a lot of the gang. Furthermore, if any of the fellows care to drop me a line, I promise to answer promptly and fully. Bob, Chile Exploration Company, Chuquicamata, Chile." — WALTER MCKAY, Secretary, Room 33-211 M.I.T., Cambridge, Mass.

• 1935 •

Altogether too much time has intervened since news of 1935 appeared in these columns. So here goes at digesting quite an accumulation of newsclips and publicity releases. Red Forster has been

made sales manager of the Boston office of the Minneapolis-Honeywell Regulator Company. Bob has been with the company since 1940 and managed sales offices in New Jersey and Buffalo before returning to the vicinity of his collegiate residence, the Sigma Chi House on Beacon Street. Tom Regan is another sales manager with migratory instincts. He has recently been transferred by the General Box Company from Worcester to Chicago. One of our coeds whom I cannot identify by her married name, Miss Helen (Phelps, Ed.) Olmstead, attended the School of Radio and Television at Syracuse University last year in preparation for adapting television to nursing education. Tom Hafer became chief industrial engineer at the Bullard Company, machine tool manufacturers in Bridgeport, Conn., early in 1954. Here's news of another promotion for a classmate in sales. In December 1953 Bud Taft became director of sales for the DuPont Photo Products Department.

Paul Cohen is continuing his scientific career in positions with long names on topics with equally long names. Paul is senior engineer in the Special Armament Systems Engineering Department of the Sperry Gyroscope Company. In March Paul presented a paper on "The Effect of Bearing and Range Errors on Target Analysis" at a Naval Symposium on Submarine Sonar Problems. An architect with our Class, Will Rapport, has directed his artistic talents to photography since graduation. An article in the *Boston Post* devotes several paragraphs to some of the glamorous subjects Will has photographed. They include Ava Gardner, Audrey Hepburn, Kitty Carlisle, Alexis Smith and such noted persons as Eleanor Roosevelt and Bess Truman. Will lives in Brookline and has a studio on Boylston Street. Phil Rhodes has resigned as Technical Director of the Copley Corporation to resume his chemical consulting activities, specializing in plastic materials and products. Phil's office is located in Cincinnati.

Sometime ago Bill Keefe was transferred from Chicago by General Electric to the position of engineer, Apparatus Sales Division, Davenport, Iowa. Bill earned his master's degree in electrical engineering after graduating with our Class and has worked in various engineering capacities for General Electric at Schenectady, Pittsfield, Lynn and Chicago. Gene Nohl has continued his career of underwater exploring over the years. As Submarine Enterprises, Gene and his associates specialize in salvaging sunken ships. He has recovered valuable cargoes from many ancient and modern wrecks. Gene also investigates natural wonders under the sea and has produced motion pictures of this work. In April 1954 Lars Sjodahl was appointed technical supervisor at the Middletown, Ohio, carton plant of the Gardner Board and Carton Company. During World War II Lars served as a lieutenant colonel in the Army.

Albert Alschuler is a member of the firm, Friedman, Alschuler and Sincere, architects and engineers, Chicago. Over the years, the firm has designed and supervised construction of more than 2,000 buildings, costing over \$400 million.

Since the War Bill Abramowitz has spent considerable time in Israel in connection with industrial development programs in progress in that country. Gordon Scowcroft continues his work in marketing. A clipping from a publication that does not mention the name of the firm announces Gordon's appointment as product marketing manager in March, 1954. The only personally originated news that has come to your Secretary's attention in a long, long time came from Jack DuRoss some time ago. Jack writes about himself that about two years ago his then employer, The Weideman Company, was bought out by Consolidated Foods and that he and several associates went into the wholesale grocery business on their own. They are I.G.A. distributors in northeastern Ohio with headquarters in Cleveland. Jack makes just criticism of the lack of 1935 news in *The Review*, and volunteers to help drum up interest in class affairs, particularly as regards Reunion.

In closing I will record some news of myself. I still work for Remington Arms as assistant chief supervisor of planning for the Bridgeport Works. I have just completed a five-year stint as president of the M.I.T. Club of Fairfield County, and am kept quite busy on M.I.T. matters as an Honorary Secretary interviewing candidates for admission. I am Chairman of the School Sites Committee for the Town of Fairfield. This is an active assignment as I am sure many other classmates concerned with school problems well know. Recreationally, I crew on a *Lightning*. The skipper is a Harvard man. We had a satisfying racing season last summer. We competed in about 25 races; won the Club championship and placed well enough in inter-club races up and down the Sound to be invited to compete in the National Championships at Detroit. By then we had run out of vacation; had our doubts the trailer would make the trip, and had qualms over the feelings of those absent members of many crews, the "sailing widows" in our respective families.

Reunion time is fast approaching. Put the early part of June on your calendars for a trip to the Institute. — J. BARTON CHAPMAN, *Secretary*, 7 Lalley Boulevard, Fairfield, Conn.

• 1936 •

For those of you who still patiently look for 1936 Class Notes, this month's issue will be somewhat of a surprise. Needless to say, you have my apologies. The Class of 1936 is about to have a 20th Reunion, in 1956, that is, and the preparations, of course, are now under way. In the past few days, as a matter of fact, there has been a healthy amount of correspondence passing back and forth among the following of your classmates: Jack Austin; Hank Lippitt; Fletch Thornton; Gordon Thomas; Tony Hittle; El Koontz; and even the writer has been shaken from his Rip Van Winkle sleep and has become an active participant again. As a matter of fact, I have even felt the pangs of a guilty conscience.

A very good bit of news is that Hank Lippitt (he would be a wonderful Class Secretary, by the way) has prepared, under his own steam and at his own per-

sonal expense, with the help of the Institute, a comprehensive list of the members of our Class. The list is presented by states and includes home addresses. You will receive it in the mail one of these days and will undoubtedly find it a very helpful guide for keeping in touch with your classmates. Among other things, Hank has in mind that our relationships have become a little rusty and believes they ought to be sharpened up under any circumstances, let alone the requirements of the 20th Reunion coming up. Hank deserves a lot of credit and the appreciation of all of us.

Then also keep in mind that we are not too far now from the 25th Reunion, at which time it is expected that our Class will give generously to the Institute. That is and should be the high point of our alumni activity as a Class, after which we start becoming "old men." So keep this in mind, won't you? However, you will see more active participation on the part of your Class in *The Technology Review* in the months immediately ahead — and we hope indefinitely. Jack Austin and those others whose names were mentioned above have generated voluntarily, with determination and enthusiasm, a plan of action which we know will arouse the interest of the entire Class. If all of us will think in terms of what this interest and enthusiasm may mean to the Institute, I think we can look upon it with even greater objectivity of purpose.

By the way, if any of you would like to help on the next Reunion, or in any other way to stimulate Class activities in the months ahead, I am sure Jack Austin will be glad to hear from you. — ROBERT E. WORDEN, *Secretary-Treasurer*, Fidelity-Philadelphia Trust Building, Philadelphia 9, Pa.

• 1937 •

George Wemple wrote in October that he had run across Dan O'Connor at a meeting of the National Industrial Conference Board Panel in New York in September. Dan is the President of the Formica Company. The other members of the panel were J. R. MacDonald, President of General Cable Corporation and Warren C. MacFarlane, President of the Minneapolis-Moline Company. George tells me that Dan upheld his end very well and that it was a most interesting meeting. Colonel Frank Kowalski, Jr., has received another "up" in his career in the Army. He has just been named commandant of a newly organized Command Management School for Army Officers at Fort Belvoir, Md. — WINTHROP A. JOHNS, *Secretary*, 34 Mali Drive, North Plainfield, N.J.

• 1940 •

Anticipating seeing each other at the Reunion in June apparently we have almost abandoned the practice of writing letters. As a result the column this month is relatively brief. Ieoh Ming Pei is Chief Architect of Webb and Knapp who are actively interested in the current proposal for facelifting the slum areas in southwest Washington, D.C. Ieoh informed the Potomac chapter of the National Association of Housing and Redevelopment that the project will pass from the "big idea" stage

down to brass tacks in the very near future if current efforts to interest the Government in lease-purchase of new office space in the area succeed.

Joe Libsch has received the \$2,000 award from the American Society of Metals for outstanding contributions to the teaching of metallurgy. The prize is awarded annually to a young teacher of metallurgy. Currently Joe is Professor of Metallurgy at Lehigh University. Dick Braunlich has been appointed leader of the new Viscose Textile Filament Section at American Viscose Corporation's Research and Development Division in Marcus Hook, Pa. Prior to joining American Viscose, Dick was with Du Pont. — ALVIN GUTTAC, *Secretary*, Cushman, Darby and Cushman, American Security Building, Washington 5, D.C. MARSHALL D. MCCUEN, *Assistant Secretary*, Oldsmobile Division, General Motors Corporation, Lansing 21, Mich.

• 1941 •

Frederick Martin, who received his doctorate in chemistry from Tech in 1941, was appointed a research associate in the chemistry research department of the General Electric Research Laboratory. For the past eight years, he had been a physical chemist with the M. W. Kellogg Company of Jersey City, N.J.

On the speaker's platform recently was Bob Alfred, treasurer of the Rode Company of Norwood, Mass. Bob, who has done much in the development, application, and production of investment castings by the lost wax process, spoke at a meeting of the Southbridge (Mass.) Technical Society. Also heard, delivering the second Marshall Woods Lecture at Pembroke College, was Jerome Namias, chief of the extended forecast section of the U. S. Weather Bureau, whose subject was "The Jet Stream." — IVOR W. COLLINS, *Secretary*, 28 Sherman Road, Wakefield, Mass.

• 1942 •

It's cold and raw out — just the right weather to enjoy most the concluding chapter from our African correspondent. If any Tech folks happen to be visiting Buffalo they can reach Ronald Shainin at the Bell Aircraft Company. I am sure there is even more to this tale than has appeared in these past three issues of The Technology Review.

"It was a large male lion with a magnificent mane. At 50 yards I squeezed off a shot from my 0.375. He swung and came for us, ears back and canine teeth gleaming in our headlights. While I worked another cartridge into the chamber of my rifle, I heard the boom of Dudley's rifle near my left ear. The lion dropped in front of our jeep. Back in camp, the natives approached warily. When they were close, Dudley stood full on the beast's stomach. The air escaping from his lungs produced a terrifying growl. The next instant there wasn't a native in sight. Later the Bantus got down on their knees, clapped their hands and chanted 'Tomazi, tomazi,' meaning 'Thank you.' That night they could sleep in peace.

"It was during our next experience with lions that John was attacked. He and I

were out with two trackers. The boys followed a spoor that led into a patch of woods and didn't come out. Suddenly we saw a lion moving in the thornbush. In an instant two big lionesses loped out to join him as he ran across the plain for another patch of woods. While I went to bring up the jeep, John spotted a lioness through the trees and wounded her. Now the lions were hidden in the thornbush. Visibility in there was 5 to 15 feet. We had to kill the wounded lioness. The law requires this, lest a wounded animal charge the next unsuspecting person to come along. To make it worse, we were upwind and they had our scent. John watched the thornbush while I went for Dudley. He and John were going in. I knew from my reading that approaching a wounded lion from upwind is a mistake. I circled to the downwind side and waited motionless in front of an anthill. Two lions came out and walked up to within 30 feet of me. My tracker moved and before I could shoot, the animals turned and ran into the woods again. Minutes later I heard shots, shouts, growls and roars. Dudley and John were charged by the wounded lioness and the lion. Their shots turned the lion, but the lioness came on. John put one bullet into her and Dudley's fire broke both her front legs. Then John fell, the lion rushed upon him and sank her teeth in his thigh. Dudley shot it through the head while it still held John's leg. We strapped John to the jeep and drove back to camp where we gave him aureomycin. Because lions are carrion eaters, their bite is extremely septic. John spent four weeks recovering in a Catholic mission infirmary at Katima Mulilo."

Mr. Chisholm tells about another time when he and Dudley were hunting in an "ideal" spot for buffalo. He drove up to a herd of several hundred and brought down a straggler, which he calls "getting 2000 pounds of beef for the price of a 25-cent cartridge." This animal is considered by some the most dangerous because only a killing shot will stop its charge. While Mr. Chisholm recovered, Mr. Shainin drove off to sell the jeep and much of the equipment, thus reducing the net cost of the expedition. It was during this selling trip that Mr. Shainin had an experience that still causes him to blink his eyes. He had not seen a white woman for five weeks. The first one he met along the banks of the Sambesi, near the native village of Katamboro, was beautiful movie star Jeanne Crain. With Dana Andrews, she was being filmed in "Duel in the Jungle," to be released in 1955. "The film unit invited me to stay for dinner. The food was so good I stayed for supper too." Mr. Shainin confesses. This, then, was the "cut-rate" expedition, 15 weeks from Buffalo, short on luxuries and long on thrills. "It was no 'champagne safari,' one with a string of trucks and natives carrying portable radios," Mr. Shainin savs. But any young fellow in good health who doesn't mind eating dirty food and going without a bath can do it.

A note from Ted Eliot telling us all that he is moving to Brownsville, Texas, where he has been elected process supervisor of the Brownsville Chemical Plant, a recently acquired subsidiary of the Stanolind Oil and Gas Company. Ted will

be in charge of all technical men at that plant as well as at other Stanolind Plants in town. Although busy moving his work, family and household effects he has managed to find time to buy an outboard motor and is planning lots of fishing trips. (Is this the sailboat man we once knew?) Leon H. Weiss is now a member of the technical staff of the Radar Division, Hughes Research and Development, Culver City, Cal. He was formerly employed with the American Electronic Manufacturing Company, Inc.

Your Secretary, when not working on Photon photocomposing equipment, has been doing a spot of lecturing. First a strictly non-technical color slide talk on "Italy's Growing Renaissance" for the Women's Club of Worcester; and, shortly thereafter, a review of progress, properties, and potentialities of electronic flash for the Massachusetts Association of Professional Photographers. The latter included a demonstration of and promotion for the HICO-LITE Flash Unit. Incidentally, Photon equipment is now in regular use by the M.I.T. Photo Service and Publications Office; and it will be demonstrated at the Boston M.I.T. Midwinter Meeting in Walker Memorial. We look forward to seeing the New Englanders there. Here's to lots of snow for the skiers — but to the barest minimum for the shovelers. — LOU ROSENBLUM, *Secretary*, Photon, Inc., 58 Charles Street, Cambridge 41, Mass.

• 1943 •

Charles F. Chubb was recently promoted to the new position of engineering section head for Naval radar in the Armament Radar Engineering Department, at the Sperry Gyroscope Company at Great Neck, N.Y. He received the A.B. degree in physics from Princeton University in 1941, the B.S.E.E. degree from the Institute in 1943, and the M.E.E. degree from the Polytechnic Institute of Brooklyn in 1950. Prior to joining Sperry, he had been employed in the M.I.T. Radiation Laboratory. Charles started at Sperry in March, 1946, as a project engineer assigned to testing the servos and performance of the S-8 gunsight and its associated radar equipment. He later worked on a study program for an anti-aircraft gun. In May, 1950, he was promoted to senior project engineer while doing servo work on a shipboard tracking radar system, and in May, 1953, he became a research engineer while working on a missile guidance system. As a result of his work at Sperry he has one patent pending.

Shao Ti Hsu, of Parkway Apartments, Haddonfield, N.J., has been appointed associate professor of mechanical engineering at the University of Dayton. Dr. Hsu is a graduate of Chiao Tung University of China, and received his Masters degree with our Class. A resident of the United States since 1943, he was recently granted the doctor of engineering degree from the Swiss Federal Institute of Technology, Zurich.

Warren E. Foster was married on October 28, 1954, to the former Lista Weir Lincoln of Fairfield, Conn., in St. John's Episcopal Church in Bridgeport. Mrs. Foster, a member of the Junior League of Bridgeport, Inc., was graduated from

Stoneleigh-Prospect Hill school and Bradford Junior college. Warren is assistant to the president of the Cornwall and Patterson company.

I received a letter from Class Agent, Jack Tyrrell, as I am sure you did too, requesting my participation in what I think is a noble investment, namely the Karl Taylor Compton Laboratories. I hope you will all follow Jack's suggestion in an effort to boost our class average donation this year. — RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford, Conn.

• 2-44 and 10-44 •

With Winter setting in I like to hibernate away from civilization (if I can't go South with the migratory birds) and draw upon my store of notes and information collected during the more enjoyable months. So squirrel-like I will delve into my storehouse and give the whereabouts of a number of classmates. John Nichols, Jr., is living in Springfield, Vt., where he is employed by Jones and Lamson Machine Company and doing development work on machine tools. John is married, Laura, and they have raised three girls five, six, and seven. If you wish to contact John his address is Highland Road, R.F.D. #1 Box 58. Art Slemmons is now married and living at 2367 Fairway Drive, Birmingham, Mich., with wife Margaret and two boys three and five. Art is working for the Chrysler Corporation as a project engineer on research assignments. I was in Akron last week but neglected to contact Ed Sanders to see how his plywood business is going. Ed began the venture about three years ago and it has kept him harnessed to his desk all week long plus the weekends. Besides being president of Allied Plywood Corporation Ed did manage to take off enough time to get married to Phyllis. Bill Jack at last report was living at 10352 Eagan Drive, Whittier, Cal., with wife Evelyn and three children: Bill eight, Robert five and Nancy four. On work days you'll find Bill in Los Angeles at the Ralph M. Parsons Company, engineers and constructors, where he is a project engineer.

Heading up the Aerodynamics Section, Research Department, at United Aircraft in Manchester, Conn., is Harlan Taylor. By coincidence he also lives at 39 Harlan Street with wife Sandra and two children, a boy three and a girl seven. Outside of Chicago in Wilmette, Ill., is Sten Hammastrom. Sten is married, wife Jinx, and at last notice had a daughter. Republic Flow Meters Company is the place where Sten hangs his hat during the day. Bernie Rabinowitz is Executive Vice-president of the Atlantic Chemical Corporation in Passaic, N.J. Bernie lives in Nutley, is married and has two children. Tom Lawson hopes he has finally set his roots down in Wayne, Penna. Tom was transferred from the I.B.M. Washington, D.C., office to Philadelphia and bought a house in Wayne hoping that his countrywide travels would end. Nancy is Tom's spouse and they have two daughters.

Arthur F. Peterson, Jr. — Pete — is up in Cleona, Lebanon County, Pennsylvania, working for Bethlehem as assistant superintendent on the Lebanon Concentrator. He reports that life is nice and quiet in

that small town. The only thing that has happened this year is chicken pox, mumps, measles, whooping cough and Tony, child #4. Walt Turner is Assistant Professor of Electrical Engineering at the University of Maine. Walt reports that he attended the Instrumentation Conference at Michigan State and also was selected for the GE-ASSEE Teaching Methods Seminar at Schenectady which was "a busy, interesting, and valuable week with young engineering teachers from all over the country." Since leaving Tech Walt has acquired a wife Dorothy and two daughters. Bob Wood has gotten way off the beaten path on a job with Aluminum Company of Canada in Shipshaw, P.Q., where he is a hydrological engineer. Although Bob doesn't get to see many classmates there he does keep in touch with Garry Myers and Randy Pratt by mail. Russ Cox made the trek and Bob entertained him showing him the hydro development. Bob is married and has three children. Peggy Bowes Smith has returned from a year and a half on Midway Island where her husband, a dentist, was sent via the courtesy of the U.S. Navy. Peggy is now living in Guilford, Conn., and busy raising four youngsters — three boys and a girl.

Bob Gillen spent 18 months in Europe constructing Esso's Antwerp Refinery. While on the project he met and married Gabrielle Caethover, spending an enjoyable honeymoon on the French Riviera. Bob is currently living in Linden, N.J., but his job is field engineer following refinery construction so any place can be home. Seth Washburn is at Bell Telephone Labs as supervisor of a group involved in the exploratory development of electronic switching techniques and circuits. Seth lives with wife and two children in Morristown, N.J. — BURTON BROMFIELD, *Secretary*, 72 Woodchester Drive, Weston, Mass.

• 1947 •

With the indulgence of the Class Notes Editor (I hope), I have delayed writing this month's column beyond the deadline in order to report first-hand and promptly the wedding of Norm Holland and Jane Kelley of Philadelphia, Pa. Norm and Jane were married on Friday, December 17, in Appleton Chapel in Harvard Yard, the ceremony being performed by the Reverend Palfrey Perkins of King's Chapel. A small and charming reception followed at the Signet Society on Dunster Street, where I managed to collar Norm for a few moments to give me details on their plans. After a wedding trip to Bermuda, Norm and Jane will be living at 2 Ware Street, Cambridge, while Norm completes his thesis for the Ph.D. degree in English Literature, which he expects to receive from Harvard this June. Jane, a graduate of Radcliffe College with both a B.A. and M.A., is assistant editor of the *International Organization Quarterly*, which is published by the World Peace Foundation.

In line with weddings and such, there are two birth announcements to report. The Ken Marshalls have a son, Lawrence Aloe, born on November 5 last. The Pete Portmanns have their third child, Claire

Joyce, born on June 16, a sister to Bruce and Brian. The latter announcement I received months ago, but unfortunately overlooked it in my last column. I wandered over to Hayden Library one Saturday afternoon some weeks ago and ran into Will Freyberger who was taking a breather from the complicated experiments he's performing for his Sc.D. thesis in Metallurgy. Will's daughter, Louise, is a year old. To return to weddings a moment, Sumner Long was married in Paris to Nancy Jane Bagley of New York, N.Y., last October. Sumner is in business as a ship broker in New York.

On a trip to the West Coast during the Thanksgiving season I had some time to spare while waiting for my flight to San Francisco at the Los Angeles Airport. I met Howard Zwemer who was waiting for his wife, Jane, and two sons, Dirk and Eric, to arrive from the East. Howard had then just recently left Allied Research Associates, Inc., (where I earn my bread) to accept a position with Lockheed Aircraft in Burbank, so it was an added pleasure to chat with him over cocktails. Speaking of Allied Research, Oiva Anderson, Dave Knodel and Art Roberts are also toiling there as senior engineers. Ed Dytko, at one time our general manager, took a position with Pratt and Whitney last summer, and is spending a period at Oak Ridge before returning to Hartford and his project engineer's billet.

Roger Freeman has been honored by an election to the board of trustees of the Rhode Island School of Design in Providence, for a term expiring in 1957. Roger is vice-president and assistant secretary of Manufacturers Mutual Fire Insurance Company. In addition to his professional duties he is presently on the budget committee of the Providence Community Fund, is a director of the Providence Athenaeum, and a member of the Providence Chamber of Commerce and Providence Engineering Society. Virginia Tower Norwood has taken a position with Hughes Research and Development Company, Culver City, Cal., as a member of the technical staff of the Microwave Laboratory.

Vince McKusick, now practicing as a tax attorney in Portland, Maine, delivered an address at the Twin Cities Tax Institute held at Bates College last October. Vince clerked with Judge Learned Hand before joining the firm of Hutchinson, Pierce, Atwood and Scribner. He also serves as president of the Portland Young Republicans. Ned Bowman, an assistant professor in the School of Industrial Management, directed an eight-week course in production control last fall under the sponsorship of the Greater Lawrence Industrial Management Club. Ned has graduate degrees from both the University of Pennsylvania and Ohio State University, and before accepting his academic appointment was employed with the Corning Glass Works and General Motors. Dr. Herbert Boyajian Locksley is presently studying in England. After six months at the National Hospital for Nervous Diseases of the University of London, he is now resident neurosurgeon at the Manchester Royal Infirmary. — CLAUDE W. BRENNER, *Secretary*, 1470 Beacon Street, Brookline 46, Mass.

I hope you all will excuse me for my two months' absence from this column, but somehow the deadline for this magazine has in the past months conflicted with the academic requirements of the Business School. Yep, I'm a student again; as a matter of fact, a career as a professional student looks inviting if I could find some means of financing, such as a wealthy widow of about 80 or so. Also here at the Business School are the following '52-ers in the second year class: Harry Kradjian and Andy Wessel, and in the first year class: Jack Copenhefer, Bob Danforth, Waldo Dietz, Sandy Kaplan, Lou Karvelas, Dick Kilcup, Jim Reese, Dave Weber and Sarkis Zartarian, and Seymour Weintraub. The "B-School Bums," that's us.

One evening as I was about to enter the Brattle Theatre, I was run down by a bicycle being ridden by Sturdley Steve, Larnard that is, just trying to be friendly. It seems that Steve is now dividing his time between doing work on his Master's in Chem Engineering at Tech, working for Arthur D. Little, and attending square and folk dances, a habit acquired in Alabama and Utah. Still a bachelor.

Dana Ferguson dropped in the other night to sip a short one. Dana has now completed the training program at the Draper Corporation in Hopedale, Mass., and is now a methods engineer, working under Lon Church, former instructor in the Course XV Department. Still a bachelor.

I saw Bob Walsh over the Thanksgiving weekend. He's still cussing me out for the contracts I left him when I re-entered civilian life. Bob, as you may remember, is now nearing the end of his time as a procurement officer with the New York Chemical Procurement District. As of January 1, Bob is scheduled to turn in his gold bars for some silver ones and turn everything in on about June 1. Still a bachelor, but status is becoming questionable.

While on the subject of the Armed Forces, Bob Briber, whom many of you might remember, writes from Camp Carson, Colorado: "Greetings, to you, Stan, from the mile high state. Right outside my BOQ window Cheyenne Mountain cuts off the western sun and the horizon. Never thought I'd be back here in Colorado while in the Army. In 15 months I've changed my address nine times. I have been in five states at six stations and have held a stack of different jobs. When my laundry, mail, and bills finally catch up with me, I'm going to be swamped. I have taught and been taught, owned and issued property, ordered and been ordered, cussed and been cussed. Only 249 days now until I can meet you in civvies. I had been at Fort Sheridan about a month when the Colonel called me to ask if I would like to go out to Camp Carson as property officer. Since my chief attribute was willingness, I told him I'd be glad to go. So on the fifth of October I said hello to a new job and a new post. There is little else to say about me. I am enjoying the job. There is enough freedom and responsibility to keep me from getting bored and time will pass quickly." Bob is ready

for his silver bar sometime in January. Still a bachelor.

Lenny Polaner dropped in with a broad grin on his face and a blue uniform on his back. It seems that he is now stationed at Wright-Patterson Air Force Base doing procurement work and was on his way to Maine on business. He dropped by to see if the work this year was as rough as it was for him a few years ago. Also still a bachelor.

I was sitting around in the process of forgetting about a twelve hour paper I had just finished(?), when I received a most mysterious telephone call from an official sounding voice. I thought for the moment that they wanted me back again. But no, fortunately, it was Burge Jamieson, in Boston for the evening from Camp Welfleet on the Cape. Burge was down there with his Skysweeper unit from Limestone Air Force Base, which is his permanent station. Burge dropped over with a few of his boys and we reminisced over old times. Burge, his wife Lib, and their little daughter Ellen are rapidly becoming real Aroostock Down-Easter. Burge tells me that Ellen, my godchild, is now almost as big as I am.

And news from some other newlyweds, Al Kandel and Fran Wender, oops, I mean Kandel. I ran into them over the Thanksgiving weekend. Al is now back on the training program with the Mergenthaler Linotype Company in Brooklyn, N.Y. He was released from the khaki garb at the end of September after some wonderful experiences in France. The Kandels are expecting an addition or additions to the family in about January or February.

Also heard from Howie Zasloff over the same weekend. He is still working for the Lummus Company in New York City as a chemical design engineer. Howie has also become a thoroughly domesticated husband. I never thought it, but it seems that Delly does the whip-cracking in the family.

Also heard during the Thanksgiving break. Bill Chandler and his wife Isabel are becoming New Jerseyites having just purchased a home in central Jersey near Linden. Bill is now back with Esso Standard after a delightful tour of duty in the Chemical Corps in Atlanta, Ga. More on Bill in the next column after a little housewarming over the Christmas vacation.

Bill and Emily Dunn now homeowners in the San Francisco area. The Duns are now students again at Stanford; the little Dunn is not quite ready for school yet. After his release from Fort McClellan, Bill, Emily and Junior headed West where Bill worked for Westvaco Chemical Division of Food Machinery and Chemical Corporation over the summer. I understand that Neil Curlee is becoming a real academician in Pittsburgh. Neil is now happily married with a few new Curlees running around the house. Let's see now. Milt Dietz seen on the steps of Moors Hall at Radcliffe College. Milt now living near Harvard Square, working for his doctorate at Tech, and riding a bicycle.

Catching up on old newspaper clippings now: Donna Thornton of Trumbull, Conn., engaged to Tom Rourke on June 29. Ken Bohlin, Lieutenant (j.g.) visited his home in Brockton, Mass. during July from his station with the Naval Ordnance

group in Washington, D.C. Herb Kagen received his M.S. in chemistry from the University of Rhode Island in June. Herb was recently elected to Sigma Xi and plans to continue studies for a Ph.D. at Wayne University in Detroit, Mich. Virginia Keegan of Rye, N.Y. was married to George Mellor on September 11. No information of the present whereabouts of the Mellors or what kind of work George is doing now. Sally Waters of Boxford, Pa., was married to Bob Manning on July 18; the Mannings are now living in Pittsburgh, occupation unknown. Bob Lynch received his wings of gold and his commission from the Navy after 20 months of training in October; present location is unknown.

And marriages of Joanne Bartlett of Amesbury, Mass., to Myles Haley on August 24, Eleanor Cookson of East Bridgewater, Mass., to Bill Hartley on August 21, Grace Cocozella of Braintree, Mass., to Paul Matthews on October 2, and Ann Jo DiMauro of Middletown, Mass. to Frank Carta on September 25. The Haleys are now residing on Plum Island, occupation unknown; the Hartleys in Boston where Bill is working for some engineering firm; the Matthews in Braintree, Mass., while Paul is working as a mechanical engineer by High Vacuum Equipment Corporation in nearby Hingham. Frank Carta writes of his wedding and himself as follows: "My wife was Simmons'52. The best man at the wedding was Lowell Smith and among my ushers were Joe Sabo and Tim Brown. Smitty and his wife are living in Wilmington, Del., where he is putting around in titanium for Du Pont. Joe is still playing around with eggbeaters for Sikorsky Helicopters in Bridgeport, Conn. Tim is back in grad school after serving his time in Korea. I am still breaking models for the flutter group of the Research Department of United Aircraft Corporation in East Hartford, Conn., where I have been since leaving dear old Technology in 1953. A recent addition to our group at U.A.C. was Andy Lemnios'53. (This is for the people in 1953 who read your notes.) When I took my frau out to dinner at Durgin Park during a recent visit to Boston, I ran into none other than Jim Humphries and his wife, Ruthie. J. J. had just bounced in from Europe a few days earlier and his plans were still a bit unsettled. Oh, yes, while I'm still mentioning names, three other '52-ers are working at the Research Department here: John Wilson in the main wind tunnel, Marty Fink in the transonic section and George Papadopoulos in the analysis section. That's it for now." Keep writing, Frank.

I'm afraid I have to end this chit-chat here. It's Sunday and the usually absent sun is shining, making Wellesley an inviting area for the rest of the afternoon. Please forward your little notes to me concerning your recent activities and those of your buddies. It helps toward making this column an interesting thing to read. And remember the M.I.T. Alumni Fund needs your contribution in order to make possible its dream of a Karl Taylor Compton Memorial come true. See you all next month, I hope. — STANLEY I. BUCHIN, Secretary, Chase E-34, Harvard Business School, Boston 63, Mass.

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